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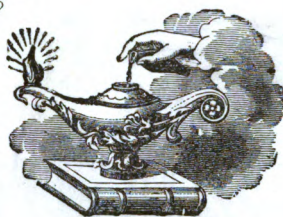


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FORTY-FIFTH ANNUAL REPORT

OF THE

BOARD OF EDUCATION:

TOGETHER WITH THE

FORTY-FIFTH ANNUAL REPORT

OF THE

SECRETARY OF THE BOARD.

1880-81.

JANUARY, 1882.

BOSTON :
Rand, Aberg, & Co., Printers to the Commonwealth,
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1880-81

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STATE BOARD OF EDUCATION, 1882.

EX OFFICIO.

HIS EXCELLENCY JOHN D. LONG, *Governor.*

HIS HONOR BYRON WESTON, *Lieutenant-Governor.*

BY APPOINTMENT.

		TERM EXPIRES.
CHRISTOPHER C. HUSSEY	<i>Billerica</i> . .	May 25, 1882.
HON. CHARLES B. RICE	<i>Danvers</i> . .	May 25, 1883.
HON. E. B. STODDARD	<i>Worcester</i> . .	May 25, 1884.
ALONZO A. MINER, D.D.	<i>Boston</i> . .	May 25, 1885.
COL. T. W. HIGGINSON	<i>Cambridge</i> . .	May 25, 1886.
ADMIRAL P. STONE, LL.D.	<i>Springfield</i> .	May 25, 1887.
MISS ABBY W. MAY	<i>Boston</i> . .	May 25, 1888.
HON. M. B. WHITNEY	<i>Westfield</i> . .	May 25, 1889.

SECRETARY.

JOHN W. DICKINSON, A.M. *Newton.*

ASSISTANT SECRETARY AND TREASURER.

C. B. TILLINGHAST *Boston.*

AGENTS.

GEORGE A. WALTON, A.M. *Newton.*

ELI A. HUBBARD, A.M. *Springfield.*

WALTER SMITH *Boston.*

ANNUAL REPORT

OF THE

BOARD OF EDUCATION.

ANNUAL REPORT.

IN discharge of its duty, the Board of Education herewith submits, to the General Court, its Forty-fifth Annual Report.

In defining the duties of the Board, the law directs that it shall prescribe the form of registers to be used in the schools, and the form of the blanks and inquiries for the returns required to be made by the school committees; that it shall lay before the General Court an abstract of these returns, together with observations upon the condition and efficiency of our system of popular education, and upon the most practicable means of improving and extending it. The Board is made responsible for the general management of the several State normal schools; it is authorized to require returns to be made to itself from all educational institutions supported or aided by the Commonwealth, and is charged with some special responsibilities concerning the instruction of the deaf and dumb. The Board has authority to appoint a secretary and agents, through whose personal labors information is collected and diffused concerning the condition of the schools, the best system of studies, and the best methods of instruction to be used in the public education of the youth of the Commonwealth. It will thus be seen that, as to the common schools, the duty of the Board is fixed by law, and lies almost wholly in the line of gathering and spreading information respecting them. To this end the school registers are kept, the reports of committees and their returns concerning the schools are required to be made, and the abstracts of their returns are printed. The work of the secretary with that of the agents of the Board, and with the published report of the secretary, is to the same general purpose. While this is done, the Board has nothing of direct control over these schools. It raises no money, erects no buildings, employs no teachers, and exercises

no authority with respect to organization, discipline, or courses and methods of study. It only inquires after what is done, suggests any thing that is better, and then puts before the public a report of what it has learned and suggested.

This is a distinctive feature of the oversight which the State has provided for its schools. It does no more, by its own officials, than to cause an inspection and report, more or less complete, to be made concerning them. The State appoints by law that the schools, of a certain grade and range of study, shall be opened, and for a designated length of time, and requires that the children, within prescribed limits, shall attend upon them; but it does not itself undertake directly to manage the schools; and, if they fail to reach such a degree of efficiency as might be desired, the State does not attempt, or has not thus far attempted, to do more than to call attention to the failure, and the means for improvement. The care of the schools, their direct management, and the whole practical control of them, rest with the school authorities, and with the people themselves in each city and town. Thus, in the matter of common-school administration, the State itself, through its own officials, does little more than to observe what is done, and cause it to be known as widely as it may, and to make suggestions of improvement.

This characteristic feature in the policy of the Commonwealth in the care of its schools is one of importance to be considered, and kept in mind. It affects the nature of the responsibility that rests with this Board in respect to the efficiency of our schools, and it affects also much more widely the judgment that is to be formed concerning the development thus far of our common-school system.

It is evident that this policy may have its elements both of weakness and of strength. It may allow to be left for a long time untouched many errors and defects in the management of the schools which might be at once removed if the State were to lay its hand directly upon them; and it may seem thus to fail, and may perhaps really fail, in bringing the schools with sufficient promptness to the best attainable results. But, on the other side, in its reliance upon the intelligence and carefulness of the people themselves, in their several localities, and through the necessity of working only through such agencies, it may secure, in a more permanent manner, the gains that are made.

That very great progress has, in some manner, been made

during the last forty years, while our public-school system has remained practically unchanged, is not open to any doubt. The schoolhouses throughout the Commonwealth are better. They are constructed with more intelligence with respect to ventilation, light, and warmth, and with respect to comfort, order, and decency. They are furnished with better appliances of every sort for the assistance of the teachers in their work. The oversight and management of the schools by committees and superintendents are exercised with more care and more skill. The provision made for the support of the schools by the several municipalities has grown more liberal; and the teachers themselves, upon whom the efficiency of the schools chiefly depends, are more adequately paid, more carefully chosen, and, as a general thing, more thoroughly fitted for the work they have to do. If much still remains to be desired, yet very much has certainly been gained. It is not meant to be suggested that all this progress is due to the efforts of persons officially connected with our system of education on the part of the State. The age itself has been one of progress, with a great turning of thought in many ways, on the methods and means and the necessity of public instruction. But, taking this whole period together, it is believed that the State officials, and especially the secretaries and agents of the Board of Education, have had a very important share in the advancement that has been made. By the conferences they have held with teachers and superintendents and committees, the addresses they have given, and the reports they have made touching all matters connected with our schools, they have greatly assisted in all this progress. It may be that this assistance has not been in reality the less effective for its being separated from any power of direct interference with the schools themselves. There has been put forth, at any rate, on the part of the State, a systematic and continued effort to strengthen and keep steadily in action those general agencies which make toward improvement, in all matters requiring wide popular discernment and co-operation. In such terms may be stated, comprehensively, the larger part of what the State has undertaken to do directly and through its officers. And, with a government like ours, the importance of intelligent and steadily sustained effort in this direction is not likely to be over-estimated.

It should be borne in mind that this variety of oversight

which the State has had upon its school system has not been without some point and stringency in its applications. No State official interferes directly, indeed, with the management of any of the common schools, to cause this or that thing to be done or omitted. But he does interpose to get information concerning what is done or left undone, and to cause these things—so discovered—to be held up widely and steadily to view. The giving of the main facts relative to the schools and their work in any locality, as they are called for, is not left to the choice of any local officer, but it is required by law. Great care has been taken in the framing of these inquiries, that are sent to the local committees concerning the schools; and the steady publicity that is given year by year to the returns received becomes a very important means of securing carefulness in the management of the schools themselves in every locality. The results, to some extent, of what is done are made known; and there is something like a public and official record of success, or of failure. It may be granted that this public record concerning the schools, which the Board has been able to cause to be made from year to year, is far less complete than it ought to be; and that the effect of it, in calling attention to the fact and conditions of success or of failure, and in giving incitement to progress, is much less than it should be. The remedy may be not in throwing aside the plan, but in causing it to be more vigorously carried out.

We are thus brought to the consideration of a topic which has been presented with urgency in former reports; that is, the desirableness of providing for a more efficient supervision of the schools, throughout the whole State, than now exists. It is not needful to repeat the arguments that have been set forth at length on other occasions to exhibit the necessity of such a provision. The oversight referred to would be of a kind to offer no interference whatever with the full control of the schools by the local boards, and to involve thus no new departure from that line of State policy which has just been sketched. The Board does not ask for officials to be intrusted with direct management or administration, but officials to carry on further and more fully the work, now in part undertaken, of diffusing knowledge concerning the best modes of management and of collecting information respecting the actual condition of the schools.

To this end the Board earnestly requests of the General Court that it may be enabled to employ at least two additional agents. This is not regarded as by any means an adequate provision for all the requirements of the public service in this department. The Board adheres to its judgment upon this matter, as expressed on other occasions, whether in its own reports or in those of its secretary. But the request is brought forward in its present form, in the hope that it may the more readily and certainly meet with favorable consideration. The opinion held by the Board, concerning the great importance of some enlargement of the working force at its disposal, is one that has been reached with entire agreement, and with great strength of belief, on the part of all its members.

It is to be considered in this connection, that the agents of the Board, as assistants of the secretary, aid in conducting the teachers' institutes, and that they attend also the meetings of the various associations of teachers, superintendents, and committees, wherever they may be held. They have thus large opportunities for acquaintance and communication with the persons directly engaged in the work of public instruction; and they are able, on these occasions, both to gather up, and to distribute in the most effective manner, the fruits of experience and reflection relative to the ordering of all school affairs. The institutes especially are of the greatest value in this respect. Twenty-one have been held during the season now closing, and they have been attended by 2,276 teachers. The interest manifested in them by the teachers, and also by the public at large, does not abate, but exhibits rather a continued increase. It is greatly to be desired that a still larger number of these meetings might be held, and that their length might be, in some cases, increased. And this might be possible, as it is not now, with the additional agents for whom we desire that provision may be made.

These agents visit also, to such extent as they are able, the schools themselves throughout the State; but the work is by far too large for them. Three years ago, by the desire and with the co-operation of the committees, some beginning was made, in one county, of a systematic examination of the schools with respect to attainments actually made by the pupils, and with a record of the results arrived at arranged in form for general use. The work attracted attention throughout the

whole country, and its importance was everywhere recognized by men acquainted with educational affairs. Something further has since been attempted in the same line, of which fuller mention will be made in the report of the secretary. But our means will allow of none but fragmentary and imperfect work in this direction.

Similar examinations, with such improvements as might be made upon them, ought to be carried shortly over the whole State. We should thus begin to be getting in hand, with something of definiteness and certainty, that material of fact respecting the condition and effective capacity of our schools, which is not now at hand in our Commonwealth; if, indeed, any thing like it is to be found in the whole country. This material of clear fact is needed as the basis of the most judicious legislation. It is required as the means of testing finally the value of particular theories, methods, or appliances. And, altogether, it may be doubted whether any very great further advance can be made in our educational system until this record of things actually accomplished is in some better degree made up and set before us. With the two additional agents whom we have asked for, something further could be hopefully undertaken in this line, while the work now carried on in other directions by the secretary and agents would be greatly furthered.

It would not be impossible, as we believe, to find the persons thoroughly qualified for the positions proposed thus to be filled. And, if the General Court shall judge it expedient to provide the means required, the Board will exercise the greatest carefulness to the end that any appointments it may make shall at once be recognized as befitting the importance of the work now waiting to be done.

In conducting the teachers' institutes, the secretary and agents have had assistance, during the season just closing, from several teachers in the normal schools, and from certain other gentlemen whose services have been secured for that purpose.

The secretary and agents themselves have wrought together with diligence and skill upon the over-abundant labors opening before them. The reports furnished each year by the secretary contain also much of valuable suggestion for teachers and committees; and they are made use of widely by many others who are concerned in the promotion of popular education. It

may be observed here, moreover, that the preparation of these reports, with the tables of statistics and other documents usually printed with them, involves of itself no small amount of labor; and it has to do thus with the existing necessity for an additional force with which to enter effectively upon the larger labors already referred to.

The normal schools, which are distinctly committed to the charge of the Board, and for which alone it is directly responsible, have received careful attention during the year. It is certain, we think, that their influence is felt to an increasing extent in the elevation of the standard of capacity and fitness in preparation of those who are to enter upon the work of instruction in our public schools. It is to be wished that larger numbers of these persons might share directly in the advantages which these training-schools in the art of teaching are able to afford.

The Board has observed with satisfaction the signs of continued popular interest concerning the moral influences put forth by our schools upon the children and youth assembled in them. In the report of last year, it was recommended that the school committees should be required by law to make special mention, in their reports, of the condition in this respect of each school under their care. This matter has been since in part provided for by the Board itself, through the inserting of questions directed to that point in its form of inquiries addressed each year to the committees. Another recommendation of last year had respect to a legal requirement for the holding of stated meetings of the committees or superintendents with the teachers in each town or city, at which meetings the purpose of the State concerning the moral training of its youth, as set forth in the constitution and the laws, might be distinctly explained and enforced, with the taking of practical counsel in this respect, and with reference also to many other matters effecting the welfare of the schools. If it be not advisable to provide any legal enactment bearing upon this subject, it will remain true that such meetings are on many accounts of great importance; and that no committee neglecting to hold them can be regarded as discharging fully its duty towards the schools, unless, indeed, a most unusual degree of care is exercised to provide in other ways for the same full and common understanding among the teachers concerning the public obligations resting upon them.

And it is always to be borne in mind, that for whatever relates to the wise ordering of the schools, whether with respect to morals or to any other matter of public interest, the people themselves in any locality can cause to be done nearly every thing that could be in any manner practicable. If they will take a sufficient care upon themselves, no further legislation is needed. They can observe what is done both by teachers and committees, and they can interpose as they may see fit, with decisive effect. And, in this matter of a sound moral influence to be exerted through the schools, a very small number of persons, even, in most communities, can make sure that it is kept in mind at least by those who are directly concerned with the management of the schools.

The school-laws as revised will be published in pamphlet form, and sent to all the committees of the towns, together with such comments and explanations as are necessary to a right understanding of their spirit and intent.

Reports in detail from the visitors of the several normal schools, and the report of the secretary of the Board, with accompanying documents and tables of statistics, are also herewith submitted.

JOHN D. LONG, *Ex officio*.
BYRON WESTON, *Ex officio*.
CHRISTOPHER C. HUSSEY.
CHARLES B. RICE.
ELIJAH B. STODDARD.
ALONZO A. MINER.
THOMAS WENTWORTH HIGGINSON.
ADMIRAL P. STONE.
ABBY W. MAY.
MILTON B. WHITNEY.

BOSTON, Dec. 14, 1881.

REPORTS OF VISITORS
TO THE
NORMAL SCHOOLS.

BRIDGEWATER.

THE Bridgewater school has had a prosperous year, fully sustaining its previous reputation. That the services of its teachers have been, in most cases, of such long continuance, should not be allowed to produce indifference to their value, or to the testimony thus furnished to the wisdom of as much permanence everywhere, in the relation of teacher and pupil, as is attainable. The general atmosphere of the school, and the average success of its graduates, may justly be spoken of as matter of congratulation to its patrons and the State.

There has been no change in the year past in the corps of teachers, which consists of Albert G. Boyden, A.M., principal; George H. Martin, A.M., Franz H. Kirmayer, Arthur C. Boyden, A.M., Cyrus A. Cole, Eliza B. Woodward, Mary H. Leonard, Isabelle S. Horne, Clara C. Prince, assistants; all of whom have taught successfully in public schools in addition to their thorough normal training and experience.

The school is a normal training-school. It has had a steady growth in prosperity and usefulness from the time of its organization in 1840.

Its courses of study, and methods of teaching and training, which are adapted to the wants of teachers in all grades of schools, are the outcome of many years of thought, observation, and practice in the training of teachers.

The pupils are led through a careful analysis of each study in the course, to know what should be taught, and the logical order of the topics, both in the elementary and in the advanced portions of the subject.

They are taught how to teach each part of the subject in its proper relation to the other parts and to the whole.

They are trained in the method of teaching by practice throughout the course, in teaching the topics to their classmates, who

are actual pupils, with the criticism of their fellow-students and the normal teachers.

After acquiring the method, they learn the principles which determine the method by a careful study of the mind.

They observe the application of these principles in the teaching of primary and grammar-school pupils in the school of observation, which includes three grades of the public schools.

Not only the art and science of teaching, in application to the different branches of the courses of study, are learned, but school organization and school government are carefully studied.

The knowledge of the subject to be taught, the method of teaching, and the principles of education are thus thoroughly associated in the mind of the pupil, and he acquires the ability to lay out and to execute the work in the conduct of his own school.

The principal was granted a leave of absence for six weeks in the early part of the spring term. A portion of this time was spent by him in observing other schools and school-buildings, for the purpose of perfecting the plans for the new chemical and physical laboratories. The larger part of the summer vacation he devoted to superintending the erection of this new building.

The statistics of the school for the year ending July 1, 1881, are as follows:—

TERMS BEGAN SEPT. 1, 1880, AND FEB. 9, 1881.	FIRST TERM.			SECOND TERM			FOR THE YEAR.		
	Gentlemen.	Ladies.	Total.	Gentlemen.	Ladies.	Total.	Gentlemen.	Ladies.	Total.
Members . . .	43	109	152	41	94	135	50	124	174
Entering classes . .	7	40	47	7	14	21	14	54	68
Graduates . . .	6	21	27	12	13	25	18	34	52
Received State aid .	12	13	25	12	10	22	15	17	32

The number admitted Sept. 7, 1881, was 65, making the number in attendance at that date 168.

The whole number of admissions to the school to July, 1881, has been 2,721: gentlemen, 913; ladies, 1,808.

The whole number of graduates has been 1,678: gentlemen, 584; ladies, 1,094. The whole number from the four-years' course has been 47: gentlemen, 30; ladies, 17.

Of the number belonging to the school for the year, Plymouth County sent

47; Bristol, 31; Norfolk, 30; Middlesex, 27; Barnstable, 8; Suffolk, 7; Essex, 5; Worcester, 4; Berkshire, 1; the State of Maine, 5; New Hampshire, 5; Pennsylvania, 2; Vermont, Minnesota, each 1. Totals: Massachusetts, 160; other States, 14.

The average age of those admitted during the year is 19 years 9 months: of the gentlemen, 20 years, 2 months; of the ladies, 19 years.

Occupation of parents: farmers, 16; mechanics, 25; traders, 6; teachers, sea-captains, each 3; coachmen, superintendents, manufacturers, each 2; clergyman, clerk, draughtsman, book-keeper, state constable, painter, sail-maker, seaman, each 1. Total, 68.

Of the 68 candidates received, there came from high schools, 42; from grammar schools, 12; from academies and private schools, 5; from district schools, 4; from colleges, 4; from normal school, 1.

The number of students from college pursuing a special course during the year, has been 3; the number pursuing the four-years' course has been 43: gentlemen, 21; ladies, 22. The number taking the two-years' course, with some additional studies, has been 15.

Of the 52 graduates for the year, 10 were from the four-years' course. Two of these graduates are continuing their studies in the school. Two of them for good reasons are not teaching, three are teaching out of the State; the others are teaching in Massachusetts in district, grammar, and high schools.

Gratifying reports of the success of the graduates in their schools are frequently received. These reports show that the graduates, generally, are successfully applying the principles taught them in the Normal School. Occasionally one fails from a want of natural aptitude for the work. The question of the pupil-teacher's fitness for the work cannot be positively decided in every case until he is placed in charge of his own school. It should be remembered that the young teacher is subjected to a severe test upon entering an ungraded district school, — the combination of a primary, an intermediate, and a grammar school, — with the most scanty means for teaching, with no course of study marked out, and with very little aid from supervision. The wonder is that more do not fail under such conditions.

The number of applications for graduates after the supply is exhausted is further evidence of the estimation in which they are held. Many calls come from prominent positions with good salaries, for graduates of ability and experience, showing that young teachers who have an aptitude and love for the work will find graduation from the school a good introduction to these positions.

The new building for laboratories was begun in June, and was ready for occupancy in September. It is a handsome

structure thirty-two by sixty-four feet, two stories in height, standing on the south side of the schoolhouse, and connected with the first and second stories of the main building by a porch. It contains four rooms, each thirty feet square, and the porch contains two rooms for teachers' laboratories.

The rooms on the lower floor are used for physical laboratories, one for the elementary course, the other for the advanced, with microscopic work and projection. The rooms in the upper story are used for chemical laboratories, one for the elementary course, the other for analytical work, qualitative and quantitative.

These rooms are furnished with the best approved modern appliances for teaching how to study and teach physics and chemistry. Each student has a place at the tables, and performs the experiments, and is taught how to make and use simple, inexpensive apparatus such as he can secure for use in his own school.

Rooms in the main building have been converted into laboratories for the study of natural history. These improvements have greatly increased the efficiency of the teaching and training, and the students are enthusiastic in the use of them.

The last legislature appropriated a sum not exceeding eight thousand dollars, for the erection and equipment of this new building. The secretary of the Board of Education and the visitors of the school were appointed by the board a building committee with full powers. This committee appointed the principal of the school superintendent of the building and furnishing, and agent for making purchases.

The working plans and specifications were made by George Hayward of Bridgewater. The excavation and stone-work were done by John Withom of Middleborough. Charles Wilson of Quincy furnished the granite. Samuel L. Ryder of West Bridgewater was the contractor for the carpenter and mason work and painting. The steam-heating and gas apparatus, and plumbing, were put up by the Walworth Manufacturing Company of Boston. J. W. Griggs of Boston furnished the slate blackboards.

All the work has been well done. The summary of bills paid for the work is as follows:—

Plans and specifications	\$60 00
Excavations and stone-work	396 42
Granite	146 10
Carpenter and mason and painting (contract)	6,181 00
Carpenter and mason and painting (extra)	172 44
Steam and gas apparatus, and plumbing	880 13
Slate blackboards	158 55
Express	5 36
<hr/>	
Total	\$8,000 00

All of which has been accounted for by the bills and receipts presented to the Building Committee and State Auditor.

These changes in the buildings have made it necessary to have some additional furniture,—new chairs and settees for the class-rooms, and tables for the laboratories in natural history. A small appropriation for this purpose is very much needed.

In thus alluding to a further appropriation, the visitors wish to speak of the generous action of the legislature of last year. The amount expended in additions and changes is, we fully believe, a profitable investment, and is already making returns in the fuller adaptation of the school buildings and furnishings to the ever-growing needs of education, and in the increased impetus in the work of both teachers and pupils.

C. C. HUSSEY, *Visitor*.

FRAMINGHAM.

THE school at Framingham is in a very satisfactory condition. The teachers are working with great zeal, and with good results. There has been no change among them, except that a permanent appointment has been made in the department of history and literature, where last year there was a temporary teacher.

We have every reason to commend also the excellent spirit and good and faithful work of the scholars throughout the school. There seems no fault to be found in any of these respects. And if we had continued cause to regret that scholars, desiring to enter our normal schools, are not more fully prepared to avail themselves of professional training, we think there is some improvement in this most important direction.

The number of scholars belonging during the year was 112.

Whole Number Admitted.

September, 1880	23
February, 1881	9
Total	32

Whole Number of Graduates.

January 20	9
June 29	24
Total	33

Of the class graduating in June, seven belonged to the advanced class.

Twenty of the graduates are now teaching; nineteen in Massachusetts.

Their success, so far as we know of it, is generally very good. We believe they endeavor conscientiously to put into practice the principles and methods learned at the school; and that they succeed in this quite as fully as can be expected, in view of the

fact that they are often obliged to conform to plans and rules not consistent with improved methods of teaching. Five of the graduates are taking the advanced course.

We have been favored during the year with lectures by Professor Atkinson, on Political Economy and on English Literature; by Rev. A. D. Mayo, on The New Education; by Mrs. Diaz, on Moral Training; by Miss Turner, on Reading; and by Walter Smith, on Art Education.

The Model Training-School deserves very high praise. The children sent to it are not above the average in ability and character; so that a fair opportunity is there given to show what thorough training may do for the scholars in our common schools. The good results gained at Framingham make us long to hasten the day when all children will be under the care of well-trained teachers. Then the money, time, and strength spent on our great system of education, will be used to the very best advantage. This can never be the case while so large a proportion of the teachers are allowed to gain their professional knowledge, often in the end but very partial, in the slow school of experience.

The appropriation of last winter provided for some changes and repairs in the system of water-supply and drainage. These have been made with the results expected. All is now in good condition in that department. The buildings are in positive need of repainting, for which, and for the renewing of the worn-out blackboards, we ask a proper appropriation.

Respectfully submitted.

ABBY W. MAY,
A. A. MINER,

Visitors.

DECEMBER, 1881.

SALEM.

WE are able, to report that this school continues under the same management, and without change in its body of instructors. The fact that the school has been for so long a time under the direction of the present principal, and that the great value of his services has been more than once before spoken of, ought not to lead us to omit altogether from these reports some mention of our continued sense of their worth. The marks of his care respecting all details of administration, and of his accomplishment in all that belongs to the work of a teacher, appear on every hand.

During the past year, more than the usual attention has been given to the subject of drawing; the senior classes, especially, have manifested great interest in the subject, and have made excellent progress in their work.

In the department of physics and chemistry a large amount of practical and intelligent work has been accomplished. Under the admirable instruction of Professor Osburn, whose method of teaching has attracted wide and favorable attention, the pupils have learned the art of observing, of stating in spoken and written language what they have observed, and of drawing conclusions from their observations. They have been required to repeat experiments performed by the teacher, to manufacture simple apparatus with which to present and illustrate subjects assigned to them for investigation, and in all respects to prepare for and conduct exercises as they would if they were in charge of schools. The results of this mode of instruction have been highly gratifying.

The school is steadily pursuing a thorough and systematic course in the study of the English language, including weekly exercises in practical composition, and the application of the principles of rhetoric.

The senior class, four days in each week, give lessons on

objects, systematically arranged, to classes of children drawn from one of the city schools. These lessons are found to be interesting to the children, and very useful to those who give them.

The statistics of the school for the year are as follows:—

1. The whole number of pupils belonging to the school during the year was 263.

Of this number, Essex County sent 164; Middlesex, 63; Suffolk, 8; Worcester, 2; Bristol, Norfolk, and Plymouth, 1 each. The State of Maine sent 8; New Hampshire, 8; New York, 2; New Jersey, 2; Ohio, 1; Texas, 1; and Wisconsin, 1.

The number present during the term which closed Jan. 25, 1881, was 223; the number present during the term which closed June 28, 1881, was 221.

The whole number of pupils that have been members of the school since its opening in September, 1854, is 2,560.

2. The number graduated from the regular course Jan. 25, 1881, was 23; the number graduated from the same course June 28, 1881, was 35.

The whole number of graduates of the school (52 classes) is 1,169.

Certificates for teaching drawing in high schools were awarded Jan. 25, 1881, to 14; and to 36, June 28, 1881.

3. The number that entered the school Sept. 7, 1880, was 67; the number that entered Feb. 8, 1881, was 36.

4. The average age of the class admitted Sept. 7, 1880, was 17.67 years; of the class admitted Feb. 8, 1881, 18.54 years.

5. The fathers of the pupils admitted during the year are, by occupations, as follows: Farmers, 23; manufacturers, 20; mechanics, 20; traders, 13; agents, 4; miscellaneous, 23.

6. The number that received State aid during the term ending Jan. 25, 1881, was 36; during the term ending June 28, 1881, 49. The whole number of different pupils that received State aid was 61.

7. The number that received aid from the Bowditch Fund during the first term was 34; during the second term, 38. The number of different pupils thus aided was 56.

8. Of the class admitted Sept. 7, 1880, 10 had taught school; of the class admitted Feb. 8, 1881, 8 had taught.

9. The number of pupils connected with each of the classes during the first term of the year was as follows: Special, 5; advanced class, 7; class A (senior), 30; class B, 57; class C, 53; class D, 71.

The number during the second term: Special, 8; advanced, 6; class A, 44; class B, 55; class C, 60; class D, 48.

10. Of the 103 pupils admitted during the year, Lowell sent 11; Salem, 9; Manchester, 6; Georgetown and Gloucester, 5 each; Danvers and Haverhill, 4 each; Lynn and Somerville, 3 each; Beverly, Chelsea, East Boston, Everett, Groveland, Marblehead, Peabody, Rockport, Wenham, and Woburn, 2 each; Andover, Billerica, Boston, Bradford, Easton, Hamilton, Lunenburg, Melrose, Merrimac, Nahant, Newburyport, North Scituate,

Pepperell, Saugus Centre, Stoneham, Swampscott, Tewksbury, Topsfield, Wakefield, Waltham, Weston, and Winchendon, 1 each. The State of Maine sent 1 ; New Hampshire, 6 ; New York, 2 ; Ohio, 1 ; and Wisconsin, 1.

During the year, fifty-four books were added to the general library by purchase, and twenty-five by gift.

The text-book library was increased by the purchase of seventy-six books and by the gift of two hundred and seventy-two books.

Nearly all the graduates of the school find opportunity to teach ; and they carry into their labors, to a very large extent, along with other fruits of their training, a thorough determination to make their own work creditable and useful to the Commonwealth, through whose wise liberality these normal schools are maintained.

JOHN W. DICKINSON,
CHAS. B. RICE,
C. C. HUSSEY,

Visitors of the School.

WESTFIELD.

THE visitors of the Normal School submit to the Board the following report : —

The teachers and pupils of this school seem to be working harmoniously together, to secure the ends for which it was established. They are laboring earnestly not only to maintain, but if possible to increase, the high reputation the school has in the past enjoyed.

Some changes have taken place the past year in the corps of teachers.

Miss Spalter, the teacher of drawing, resigned her place at the close of the summer term, after having given to the school five years of successful service. She was held in high esteem by the pupils for her cheerful temper, her faithfulness, and her skill as a teacher. Those who have been under her instruction will long remember with what devotion she performed the duties of her office, and with how much sympathy she sought for opportunities to encourage and aid them in the performance of new and difficult tasks.

The place made vacant by the resignation of Miss Spalter has been filled by the appointment of Miss Clara Wilson, a graduate of the Normal Art School, Boston. Miss Wilson brings to her department great enthusiasm, and a high reputation for learning and skill. What she has already accomplished furnishes assurance of success.

For two years the school has been in need of an additional teacher. Mr. Walter Barrows, a graduate of the School of Technology, Boston, has been appointed to supply this need. Mr. Barrows entered upon the discharge of his duties as teacher, Sept. 1 of the present year. His thorough preparation for the department he is to fill will make him a valuable as well as necessary addition to the teaching force of the school. His salary for the remainder of the present year will be paid

from funds saved for other objects. If he is permanently retained, an addition must be made to the amount annually appropriated to the support of the school.

The boarding-house has been thoroughly painted during the year, and no extensive repairs on the school-building are at present required.

The sewage of the boarding-house is now discharged through the town brook, which hitherto has been allowed to be used for the purpose, and as a substitute for a sewer. But a suit in equity has been commenced against various parties now using the brook as a sewer, and it is not impossible that injunctions prohibiting such use may be issued. If so, a considerable outlay will be required to secure a substitute for the present sewer.

Of the graduates of last year, all except three are known to be engaged in teaching in the public schools. Two of the three have been unable to teach, on account of illness; from one no report has yet been received. The other members of the two graduating classes of the year have all taught.

Criticisms of their work have been requested, but thus far no unfavorable reports have been returned. The following, among the testimonials received during the past six months, will indicate their general character: "She is doing better than you predicted;" "Your teachers here are all doing well;" "They greatly honor your school." Another speaks in the highest terms of the skill the graduate has shown in organizing and conducting her school. Another commends the teacher for the clear ideas possessed of what should be done.

By the reports sent in, it appears that school committees are more inclined than formerly to allow the graduates to use their own methods of teaching, holding them responsible only for results.

The school has been favored the past year with visits and addresses by the secretary and agents of the Board of Education. Professor Walter Smith has given the school two valuable lectures. Professor Harvey Porter of Beirut, and Professor H. H. Rusby of Franklin, N. J., have made valuable donations to the collections in natural history.

I cannot close this report without making special mention of the relations which my distinguished associate on the visiting board of the school has for a long time held to its management and success.

For eighteen years Dr. William Rice has been a visitor of the school; and during his long term of faithful service he has spared neither time nor labor in contributing what he could to its prosperity. During his connection with the school the Normal Schoolhouse has been twice enlarged; a large and commodious boarding-house has been built; the attendance upon the school has been largely increased and the quality of its work greatly improved.

By his wise counsels and his never-failing sympathy, Dr. Rice has greatly endeared himself to teachers and pupils; and they, with this entire community, deeply feel the loss they have experienced in his resignation. They will follow him in his retirement with good wishes for his health and happiness.

The usual statistics of the school are appended.

Members.

Ladies	109
Gentlemen	11
Total	— 120

Of this number, Hampden County sent 58; Hampshire, 10; Berkshire, 12; Franklin, 7; Worcester, 5; Essex, 3; Middlesex, 1; Barnstable, 1; New Hampshire, 3; Connecticut, 12; New York, 3; New Jersey, 1; Ohio, 2; District of Columbia, 2. Total, 120.

Graduates.

January, 1881:—	
Ladies	8
Gentlemen	0
Total	— 8
June, 1881:—	
Ladies	15
Gentlemen	2
Total	— 17
Whole number:—	
Ladies	23
Gentlemen	2
Total	— 25

Entering Class.

Aug. 31, 1880:—	
Ladies	41
Gentlemen	3
Total	— 44
Feb. 8, 1881:—	
Ladies	13
Gentlemen	1
Total	— 14

Whole number : —

Ladies	54
Gentlemen	4
Total	— 58

Average age : —

Ladies	18 years 4 months
Gentlemen	19 " 2 "
General average	18 " 9 "

Occupation of parents : Mechanics, 6; farmers, 20; professional men, 6; manufacturers, 5; merchants, 8; laborers, 2; peddlers, 2; contractors, 2; hotel-keepers, 2; miscellaneous, 5; unknown, 5. Total, 58.

Recipients of State Aid.

January, 1881 : —

Ladies	21
Gentlemen	6
Total	— 27

June, 1881 : —

Ladies	25
Gentlemen	9
Total	— 34

Whole number : —

Ladies	46
Gentlemen	15
Total	— 61

M. B. WHITNEY, *Visitor.*

WESTFIELD, Dec. 10, 1881.

WORCESTER.

THE visitor of this school finds good reason to speak with confidence and satisfaction of its work during the past year.

With unflagging zeal and by unstinted labor, it has faithfully discharged its duty to the Commonwealth.

The staff of teachers has been increased and strengthened by an important and much-needed addition: Miss Ellen M. Haskell, formerly principal of Wheaton Female Seminary, and later a teacher in the Worcester High School, was secured for the school in June, and began her work in September.

This fills the place made vacant some time since by the resignation of Miss Foster, and gives to the school an adequate and excellent force of instructors; every one mature, experienced, and skilful, and all acting together in a spirit of confidence and harmony.

The practice of "apprenticeship" in the public schools of Worcester, designed to secure to the pupils during their course actual experience in teaching and managing children under conditions involving real responsibility, has been extended so as to cover a considerably longer term of service than formerly.

At the end of their first year in the Normal School, students may now serve as apprentices for six months, or half a school-year,—in three grades of school, two primary and one grammar,—and then return to the Normal School for a second year of study before receiving their diplomas, thus lengthening by one-fourth the period of their pupilage, making it two years and a half instead of two years; and at the same time acquainting themselves more thoroughly with the practical details, the every-day duties and difficulties, of the teacher's work. Almost all the pupils elect this longer course, and so graduate with the advantage of more maturity and readier skill than they could otherwise attain.

There is a constantly increasing demand for graduates as

teachers, and almost uniform testimony from those who employ them, that their instruction and management are highly successful and satisfactory. There is also ample evidence that their success is due to the instruction and training received at the Normal School. They are slowly but surely establishing, in the communities where they teach, a higher standard in the spirit and methods of school-teaching; and this not by unseemly agitation and discussion, but by quietly doing their work as it ought to be done.

The school-building has been in use with no considerable alterations or repairs for nearly eight years. It proves to be suited to the needs of the school in almost every particular, and, if it were to be rebuilt to-day, could not be essentially changed in plan for the better. There is now, however, pressing need of some repairs, — chiefly of the roof, wood-work, blackboards, and water-closets, — estimates for which will be laid before the legislature, and should receive prompt attention.

The school has been favored during the year with addresses and lectures of interest and value as follows: —

Anniversary address, by Rev. Francis Tiffany of West Newton; "Learning and Knowing," by Mr. Eli A. Hubbard of Springfield; "Political Economy," by Professor William P. Atkinson of Boston; "Drawing in the Public Schools," by Professor Walter Smith of Boston; "The Flora of the Tropics," by Capt. V. P. Parkhurst of East Templeton; "Teaching," by James A. McLellan, LL.D., of Ottawa, Ont.; "Typical Mollusks," by Professor F. G. Sanborn of Andover.

The grounds have never been fenced; and a special appropriation for a suitable fence should be recommended by this Board.

During the year, the Rev. William Rice, D.D., of Springfield, has resigned as a member of the Board of Education. He has long been a visitor of this school.

The teachers unite with me in profound regret that his valuable advice and genial friendship will no longer serve to maintain a school which he truly loved.

STATISTICS.

1. Number of pupils belonging to the school during the year: —

Gentlemen	5
Ladies	162
Total	— 167.

2. Number in entering classes:—

In February :—

Gentlemen	2
Ladies	14
Total	— 16

In September :—

Gentlemen	2
Ladies	35
Total	— 37

Total admissions for the year, 53.

3. Number in graduating classes :—

In February, none.

In July :—

Gentlemen	2
Ladies	14
Total	— 16

4. Number of last year's graduates now teaching, 20, or 100 per cent.

5. Number of last year's graduates teaching in Massachusetts, 19, or 95 per cent.

The following statements, from school officers having oversight of the graduates of 1880, furnish the best answer I can give to the question, "With what success are they teaching?"

(a) "Not above the average."

(b) "Such as to make us wish to retain her services as long as we can."

(c) "Much above the average teacher."

(d) "On the whole, above the average of our teachers."

(e) "On the whole, superior to most that have come under our notice."

(f) "She is a most conscientious worker, and keeps up a perpetual interest in her school."

(g) "She has too little physical energy, but has a sweet disposition that makes her a valuable teacher."

(h) "She is always cheerful and prompt at her work. I specially like all I have seen of her."

From the full testimony, of which the foregoing extracts give a just notion, it appears that our graduates of 1880 are teaching with good success.

The average salaries per month of our graduates, going back only to the class of 1876, the first class graduated here, are as follows :—

For male graduates, \$85-00.

For female graduates, \$48 05.

From such evidence as I have been able to obtain from graduates themselves, and from those who have official charge of their schools, I conclude that the "principles taught in Normal School" furnish the basis and guide of their teaching.

The following statistics, though not called for by the secretary, have usually been published. Of the pupils admitted there are:—

From Franklin County	1
Middlesex "	1
Hampden "	1
Worcester "	44
Connecticut	2
New Hampshire	2
Vermont	2

Average age of those admitted:—

In February	17 years 10 months.
September	18 " 8 "

Occupation of parents:—

Mechanics	22
Farmers	7
Unclassified	4
Agents	3
Laborers	8
Foremen	2
Grocers	2
Gardeners	2
Clergyman	1
Coachman	1
Fireman	1
Janitor	1
Housekeeper	1
Nurse	1
Paper-hanger	1
Stable-keeper	1

Number receiving State aid:—

Fall and winter term, 1880-81	12
Spring and summer, 1881	13

Additions to the library:—

Text-books	187
Reference-books	101
Total	— 288

Number of volumes in library:—

Text-books	2,985
Reference-books	1,560
Total	— 4,545

E. B. STODDARD,

Visitor.

Dec. 1, 1881.

EIGHTH ANNUAL REPORT
OF
THE BOARD OF VISITORS
OF THE
MASSACHUSETTS NORMAL ART SCHOOL.

1882.

MASSACHUSETTS NORMAL ART SCHOOL, BOSTON.

THE visitors of the Normal Art School respectfully submit their Eighth Annual Report, covering the year ending June 30, 1881.

When the occupancy of the Deacon House was determined on, it was understood to be doubtful whether the heating-apparatus would prove to be adequate during the severity of the winter season. Experience has made it clear that it was not adequate. Some portions of it having proved defective, it was judged wise to construct a new boiler on an enlarged scale. Under the agreement embodied in the lease of the premises, the State will pay fifteen per cent of the cost as additional annual rent. It is provided, however, that this addition shall in no event exceed four hundred dollars (\$400). It is still a question whether the radiators are sufficient in certain parts of the building. Should it be necessary to enlarge these, or add others, the expense will be still further increased. The cost thus far is eighteen hundred dollars (\$1,800). The addition, therefore, amounts to two hundred and seventy dollars (\$270) a year. This sum must be provided for in future appropriations. The additional sum for the current financial year is one hundred and twenty dollars (\$120), for which sufficient funds are in hand.

An analysis of the facts connected with the evening school led to the conclusion that its continuance was not essential to the ends for which the expenditures are made. Of the seventy-two pupils in the evening classes, more than one-half were from Boston, and could be equally well provided for, without additional expense, in the city evening schools. The remainder were all from the neighborhood of Boston, and could generally find instruction, it is probable, in the places of their residence. At

all events, as but seven of the remainder were teachers, the State could hardly be justified in the outlay which the support of the evening school required. It was, therefore, discontinued.

The statistics for the year are as follows : —

Whole number belonging to school, 294.

Day Classes.

Ladies	179
Gentlemen	43
Total	— 222

Evening Classes.

Ladies	32
Gentlemen	40
Total	— 72

Summary.

Day classes	222
Evening classes	72
Total	— 294

Of students entering during the year : —

Suffolk County furnished	125
Middlesex County “	35
Norfolk County “	16
Worcester County “	4
Essex County “	4
Bristol County “	2
Barnstable County “	1
Franklin County “	1
Hampshire County “	1
Hampden County “	1
	— 190
Ohio “	2
Michigan “	1
New Hampshire “	1
Connecticut “	1
	— 5
Total	— 195

Number in the entering class : —

Day Classes.

Ladies	101
Gentlemen	29
Total	— 130

Evening Classes.

Ladies	29
Gentlemen	86
Total	65
Total summary	195

Average age of those admitted :—

Day Classes.

Ladies	20 years, 3 months
Gentlemen	18 " 11 "
General average	19 " 11 "

Evening Classes.

Ladies	24 years, 10 months
Gentlemen	24 " 4 "
General average	24 " 6 "

Occupations of parents : Teachers, 18; retired, 13; machinists, 11; doctors, 4; manufacturers, 7; book-keepers, 6; farmers, 8; clerks, 6; director of art, 1; brass-founder, 1; pattern-maker, 1; watchmaker, 1; merchants, 6; dry-goods merchants, 7; cashier, 1; treasurer, 1; druggists, 4; dentists, 3; storekeepers, 3; glass-stainer, 1; compositor, 1; oil-merchant, 1; tailors, 2; painter, 1; publisher, 1; car-builder, 1; solar finisher, 1; city missionary, 1; gardeners, 2; jewellers, 5; sea-captain, 1; printer, 1; actors, 2; writer, 1; piano-maker, 1; piano-polisher, 1; artist, 1; hardware, 1; banker, 1; electrical instruments, 1; electrical light, 1; boots and shoes, 4; lawyers, 3; millwrights, 2; mechanical engineer, 1; builders, 3; reporter, 1; agent, 1; surveyors, 2; stone-cutters, 3; stucco-worker, 1; lithographer, 1; mason, 1; carriage-trimming, 1; contractor, 1; United States Navy, 1; housekeepers, 2; photographers, 4; wood-carver, 1; ship-builder, 1. Total given, 165; not given, 30: total, 195.

Number obtaining Certificates.

	Ladies.	Gentlemen.	Total.
Certificate A	21	7	28
" B	8	5	13
" C	3	3	6
" D	5	2	7
	37	17	54

Number of diplomas at graduation as art masters and art mistresses :—

Ladies	3
Gentlemen	2
Total	5

There had been some things in the conduct of the school which made certain changes in its *personnel* highly desirable. At the close of the school-year some changes were made. Others arose voluntarily. Mr. Vonnoh resigned that he might study art abroad. Miss Mary Carter, to the regret of the Board of Visitors, surrendered her situation to return to her native land. Miss Mercy A. Bailey, who had devoted many years to the same and kindred work, succeeded to Miss Carter's labors, and is proving faithful and successful.

Mr. Vonnoh's duties were devolved upon Mr. A. H. Munsell, who is exhibiting much enthusiasm in his work. In several respects his methods are original, and secure the closest attention of his class. In addition to his position as instructor, he holds also that of curator. So far from these duties being incompatible, the arrangement is proving eminently satisfactory; not only are the duties of the office of curator promptly discharged, but certain important arrearages in the work belonging to the office are being brought up. The new arrangement in this respect has also greatly contributed to the good order of the school. The curator is at his office some time before the school-sessions begin; the pupils call for whatever books, copies, or models they will need during the session. In case of any important omission, the teacher goes to the office, and supplies the deficiency. Thus the disorder of the former arrangement is entirely avoided. Not only is no practical inconvenience experienced from the closing of the office during the afternoons when the curator is giving his lectures, but it is practically closed to the school during the forenoons as well, leaving the curator uninterrupted in the discharge of his manifold duties. Both economy and the general welfare of the school are thus secured.

The work of one other teacher remained to be provided for. With the exception of the Normal Lectures, this work was divided between Mr. Otto Fuchs and Mr. Walter F. Brackett. These gentlemen had been long employed in the school in more advanced work of the same general character. Their instruction had been uniformly satisfactory. Of high character, modest bearing, and entire integrity, they would carry forward the work, it was believed, which is but preparatory to that in which they were already engaged, in a manner equally satisfactory. This expectation is fully realized. The work referred to is in Class A, and is good work. There is a just distribution of

instruction, a straightforward helpfulness, and an earnest desire for the equal progress of all, producing the happiest results with the pupils, both in their tone of feeling and in their practical success. The work of Class A has never been better. In some respects it excels that of the preceding year. One element in this success probably is a higher ability in the members of the class.

The Normal Lectures are given by Mr. Charles M. Carter, a graduate of the school, whose instruction in the teachers' institutes had called attention to his special fitness for such work. He is amply fulfilling the expectation of the visitors. Beyond his labors in the school he assists at the institutes, and supplements their work by visiting such cities and towns as desire his aid in reviving and extending an interest in industrial drawing. He lectures to teachers, under the direction and with the co-operation of the local committees, suggests the best methods of advancing the work, and seeks to promote a higher estimate of its value. As some little time is requisite to arrange such labors, and set the wheels in motion, not much can yet be said of results; but, if this method of work shall be approved, a satisfactory harvest is confidently predicted.

The duties of the principal and of the other teachers—Mr. Bartlett, Mr. Patten, and Miss Hoyt—remain unchanged. The various subordinate instructors and employees are working harmoniously together, and, so far as depends upon them, securing good feeling throughout the school.

A. A. MINER,
CHAS. B. RICE,
E. B. STODDARD,
ABBY W. MAY,

Visitors.

BOSTON, Dec. 1, 1881.

FORTY-FIFTH ANNUAL REPORT

OF THE

SECRETARY OF THE BOARD.

SECRETARY'S REPORT.

To the Board of Education.

I RESPECTFULLY present herewith the Forty-fifth Annual Report of the Secretary.

SUMMARY OF STATISTICS FOR 1880-81.

Number of cities and towns: cities, 21; towns, 325.

All have made the annual returns required by law.

Number of public schools	6,001
Increase for the year	431

NOTE.—The real increase is 138. The apparent increase as shown by the tables arises from a change in the basis upon which some of the returns were made.

Number of persons in the State between the ages of 5 and 15 years, May 1, 1880	812,680
Increase for the year	5,359

Number of pupils of all ages in all the public schools during the year	325,239
Increase for the year	8,462

Average membership of pupils in all the public schools for the year	262,081
Increase for the year	784

Average attendance in all the public schools during the year	283,108
Decrease for the year	19

Per cent of attendance, based upon the average membership	89
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Number of children under 5 years of age attending the public schools	1,685
Decrease of	148

Number of persons over 15 years of age attending the public schools	24,344
Decrease for the year	676

Number of towns which report having made the provisions concerning truants required by law	281
Increase for the year	17

Number of persons employed as teachers in the public schools during the year: males, 1,134; females, 7,727; total	8,861
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Number of teachers required by the public schools . . .	7,155
Number of teachers who have attended normal schools . . .	2,286
Number of teachers who have graduated from normal schools, . . .	1,981
Average wages of male teachers per month in the public schools	\$85-54
Increase	\$18-00
Average wages of female teachers per month in the public schools	\$38-49
Increase	\$7-90
Aggregate of months all the public schools have been kept during the school-year	53,506-6
NOTE.— By an error in the returns this aggregate appears in the tables to be 50,633 months 6 days.	
Average number of months the public schools have been kept (8 months 18 days)	8-18
NOTE.— In tables this appears as 8 months and 9 days.	
Number of high schools	215
Number of teachers in high schools	595
Number of pupils in high schools	18,900
Amount of salaries paid to principals of high schools . . .	\$262,867-14
Evening schools: Number, 97, kept in 29 cities and towns.	
Number of teachers, 408. Whole number of pupils, 10,294: males, 7,852; females, 2,442. Average attendance, 4,765.	
Number of evenings, 1,659. Expense	63,589-00
Amount raised by taxation for support of public schools, including only wages of teachers, fuel, care of fires and school-rooms	4,130,714-11
Increase for the year	\$68,151-37
Expense of supervision of public schools	159,813-79
Salaries of superintendents (included in the above) . . .	62,492-22
Expense of preparing and printing school reports	12,450-45
Expenses for sundries, books, stationery, maps, globes, etc. .	291,728-40
Amount expended in 1880-81 for erecting schoolhouses . . .	535,895-37
Amount expended for alterations and permanent improvements in schoolhouses	267,545-67
Amount expended for ordinary repairs of schoolhouses . . .	121,534-16
Amount of voluntary contributions for public schools . . .	5,279-63
Amount of local school-funds the income of which can be appropriated only for the support of schools and academies .	2,161,503-46
Income of local funds appropriated to schools and academies .	110,327-63
Income of funds appropriated for public schools at the option of the towns, as surplus revenue, tax on dogs, etc. . . .	183,072-36
Income of State school-fund paid to cities and towns in aid of public schools for the school-year 1880-81	69,007-81
Of this amount there was appropriated for apparatus and books of reference	4,326-97
Aggregate returned as expended on public schools alone, exclusive of expense of repairing and erecting schoolhouses .	4,851,566-55

Sum raised by taxes, and income of funds at the option of the towns, and the tax on dogs (exclusive of taxes for school-edifices), for each child in the State between 5 and 15 years of age	15,516
Percentage of the valuation of 1881 appropriated for public schools, including only wages of teachers, fuel, care of fires and schoolrooms (two and fifty-one hundredths mills)	\$0-002 $\frac{11}{100}$
Schools in charitable and reformatory institutions: Number, 15; number of different pupils, 945; average number attending during the year, 603; number under 5, 23; number between 5 and 15 remaining July 31, 1881, 540; number of teachers: males, 9; females, 14; wages of male teachers per month, \$49-17; female teachers, \$23-38; length of school, an average of 11 months and 15 days.	
Number of incorporated academies	68
Whole number of students for the year	8,069
Amount of tuition paid	\$433,841-18
Number of private schools	349
Whole number attending for the year	17,842
Estimated amount of tuition	\$387,926-77
Amount paid to maintain public schools: For wages, fuel, care of fires and schoolrooms, supervision, repairing and erecting schoolhouses, printing reports of school committees, providing apparatus and books, stationery, maps, globes, schoolroom supplies, etc.	\$5,776,541-75
Amount for each person in the State between the ages of 5 and 15 years	\$18-474
Amount for each person in the State between the ages of 5 and 15 years, exclusive of expense of repairing and erecting schoolhouses	\$15-516
Percentage of valuation of 1881 ($3\frac{1}{2}$ mills)	\$0-0085
In addition to the amount paid for her public schools, Massachusetts expended in 1880, —	
For her deaf and dumb	\$29,128-76
For her blind	30,000-00
For her idiotic	17,500-00
For her children at Primary School, Monson	51,976-18
For her boys at Reform School, Westborough,	39,441-54
For her girls at Industrial School, Lancaster	18,217-72
Total	\$186,264-20

DEAF-MUTES.

For many years it has been the policy of the Commonwealth to afford this unfortunate class the means of securing a good education. The doors of the American Asylum at Hartford, Conn., of the Clarke Institution at Northampton, and of the Horace Mann School at Boston, are open to them; excellent

facilities for instruction are furnished, and the State, as appears elsewhere in this report, bears a part of the expense. From the report of the Principal of the American Asylum, bearing date April 23, 1881, it appears that there were at that time 179 pupils in the institution, and that 61 of them were from Massachusetts. The report says, —

“The general health of the pupils throughout the year has been exceptionally good. There has been but one case of serious illness, — a case of pneumonia, — and in that the recovery was speedy and complete.”

Of the graduates from the institution it says, —

“Our graduates are to be found in all parts of New England, and, indeed, scattered all over the United States. With few exceptions they are honest, industrious, and respected citizens, earning a comfortable support for themselves and their families. They are engaged in a great variety of occupations, and in all of them take good rank as workmen.”

The method of instruction followed at the American Asylum is that known as the sign method, while the other schools adopt the method of articulation. The different methods of these schools, and the interest awakened in the subject, lead the principal of the American Asylum to restate the arguments in favor of the method practised there; and in his report we find the following: —

“In the discussion we shall use the term, ‘Pure Oral System,’ being that adopted by the Milan convention, to designate the articulation system; and the term ‘American System,’ to designate that comprehensive system in general use in this country, where signs, the manual alphabet, and writing are used as the means of instruction, and articulation and lip-reading are taught as accomplishments. That a certain portion of the *déaf* may be taught articulation, and through it receive an education, is conceded by all. This portion includes the *semi-mutes* and the *semi-deaf*, and exceptionally bright cases of total congenital deafness. These can be taught in this way, as they may soon acquire, if they do not already possess it on entering school, sufficient articulation and lip-reading to enable them to communicate with their instructors. There is another class, comprising a large proportion of deaf-mutes, who never would attain facility in articulation and lip-reading. This class nearly all teachers of the deaf, including a large part of the most pronounced articulationists, admit can be better taught through the sign system. Concerning the most profitable way of instructing those occupying the middle ground between these two classes, there is earnest dispute. It is conceded by most advocates of articulation, that the general education of this medium class can be carried on much more rapidly, and a broader development given, in the time allotted them at school, through the American system, than through the ‘pure oral’ system; but they strenuously claim

that the benefits of the articulation and lip-reading, which they acquire, more than compensate for the loss in general development. On the other hand, the advocates of the American system maintain that this medium class may carry on their general instruction by the sign system, and, at the same time, under special teachers, acquire nearly as much of articulation and lip-reading as they would if taught by the 'pure oral' system. This is the theory and practice of this institution.

"Again, the advocates of the 'pure oral' system almost invariably claim that the use of signs in the instruction of the deaf hinders their progress in the acquisition of language. They claim that the imperfections in the language of the pupils of the sign schools are caused by the habit of thinking in signs. But we find the same imperfections in the language of pupils who have been taught exclusively by articulation, and who, their teachers claim, have no knowledge of signs. Precisely the same kind of mistakes are made, also, by foreigners who attempt to write the English language before they have thoroughly mastered it. The following quotations will illustrate this point.

"No. 1 is an extract from an imaginary story suggested by a picture which lay before the pupil while it was written. The writer lost hearing at the age of two and one-half years, and had been at school only where the use of signs was prohibited.

"No. 2 is an extract from a letter written by a little Indian boy at school at Carlisle Barracks, Penn.

"No. 3 is an extract from a letter of a Japanese gentleman to a friend living in this city.

"No. 4 is a letter written by a young Mexican, who is now attending a private school in this State.

"No. 1. — 'A woman sat in the street, and some people want eat apples and we gave money to her about it. Two boys asked how much cost a apple. She said five cents. He don't pay it, and we walked all around in the street, and woman stay is too long time, because she is very tired, and two boys saw her sleeped, and he walked no noise thief and ran off. He are very bad boy because we thief apples to poor woman.'

"No. 2. — 'This is a very beautiful morning, because my heart is very cheerful now about something just a little talk to you again this time. . . . I want you answer back to me very well. I think to try. I want to please me every day. What you said them, I want hear them all you truth because good man every day. I very hard try read this time. . . . I was very excuse all the time at this Carlisle Children's School.'

"No. 3. — 'You will like not with a slightest doubt this kind walk should you be chanced to be in E—— during that time. But I must confess that I like better to enjoy with our little circle under the trees overhanging upon your house where we played many a time croquet, or anywhere we used to spend many but summer eves to joyously on green grass, which rather difficult to get in E——, on account the stiffness of society in E——, or which is found should we go to the public places, parks, but very much unpleasant through mixing yourself with the commons who are rough and ignorant beyond expression.'

"No. 4.

'N—, Conn., April 13th, 1881.

"DEAR SIR, — Last vacation I had very pleasant time. I went to Hartford and spend day and a half. The time seemed to me very short indeed. I saw many thing that I never have seen them before. I came very happy from my trip. Next week I went to New York to see my friend, but I did not met him. I saw the Obelisk from far distance, because the policeman did not let us go near it. In the afternoon I started to Buffalo. Before I went to Buffalo, I went to Niagara Falls.

'Yours truly,

'J. M—.'

"How can these mistakes be accounted for? They surely cannot be attributed to signs. No: in all these cases the trouble comes simply and only from an imperfect knowledge of the English language. The remedy for these imperfections must be found in an increased familiarity with the language, and this familiarity must come through practice in the use of language. The pure oralists claim that their pupils get more practice in language than the pupils of the sign schools; but observation of the working of their system leads us to believe that this claim is unfounded. The method of communication is so much slower, and must be so much more individual in its working, that the pupils taught by the American system actually get much more practice in the use of the English language than the pupils taught by the 'pure oral' system.

"Signs are used by teachers only as a means of instruction, — never as an end. The mastery of the English language is a chief end of the whole course. Written language and the manual alphabet, by which sentences are spelled out letter by letter in the same way as in writing, are used incessantly. Ideas must be acquired from the printed page, and acquired ideas must be expressed in written language. These two processes we crowd to the utmost of our ability.

"Another evidence that the use of signs is no hinderance to the acquisition of written language is the fact that, almost invariably, the best language pupils are to be found among the best and clearest sign-makers. Before a thought can be clearly expressed, it must be clearly comprehended by the mind; and in no way can an idea be so quickly and so clearly conveyed to the mind of an imperfectly educated mute as through signs. Again and again have we seen pupils, taught exclusively by articulation, where signs were forbidden, yet whose language was full of imperfections, rapidly improve in the correct use of written language when brought under instruction by signs.

"But, say the pure oralists, suppose the progress is slow at first, the pupils taught by articulation soon attain such ready communication that they more than regain the time lost in the first steps. This theory is good: would that facts sustained the theory! But with a large majority of the pupils in articulation schools, *ready* communication is not reached. It is labored and slow and uncertain to the end of the course; and they leave school with a little articulation and some ability to read on the lips, but with much less general education and mental development, and so are far less fitted for the practical duties of life than those who have been under instruction for the same length of time by the American system.

"Again, it is claimed that the pure oral method restores mutes to society by giving them the same means of communication as is in general use by the community about them. This theory is also good, but is sustained by facts only in a small minority of cases. Some of the pupils taught by the pure oral system do acquire the ability to communicate readily by articulation and lip-reading. So also do some of those taught by the American system acquire the same ability. In both cases they are the exceptions, and not the rule.

"Pupils taught by the 'pure oral' method neither understand books better, nor use language with more facility or accuracy, than pupils of the same average ability taught by the American system for the same length of time. In fact, so far as our observation goes, the former are quite behind the latter in these respects.

"Both classes of schools have pupils who have learned language through the ear. They are either partially deaf now, or they acquired language before losing their hearing. These use language readily either in reading or in writing. They form an entirely different class of pupils from the toto-congenital mutes, and they have nearly as much advantage over the latter as pupils possessing all their faculties have over semi-mutes. They occupy a medium ground between the two other classes. They cannot be measured by the same gauge: they start on their school course under very different conditions. In the acquisition of language the toto-congenital mute is heavily weighted in the race with his semi-mute schoolmate. Whatever the system of instruction, this wide difference cannot be overcome. To judge fairly of the merits of productions of pupils, this difference of conditions must always be taken into consideration. That which in the one case would deserve the highest praise would merit very little in the other.

"Among pupils possessing all their faculties are always to be found a certain proportion who never attain to respectable scholarship. Among deaf-mutes this proportion is greater than among hearing children, the minds of some of them having been affected by the same disease which deprived them of their hearing. Many of these are never able to surmount the difficulties, in the acquisition of the English language, which stand in their way; and consequently in all schools for the deaf we find numerous 'murders of the king's English;' and the sin can be attributed to no system of instruction, but is due to unalterable conditions imposed by Providence.

"It seems to be taken for granted in some quarters, that children taught by the sign method have no means of communication except by signs. Again and again we have heard it said that such pupils have no means of communication with their friends, and cannot enjoy ordinary social intercourse. This is an entirely mistaken idea. The only method of communication of which they are deprived is that of speech (a great deprivation, it is true); but every other mode of communication is open to them. The eye speaks; the hand speaks; pencil and slate or paper are used with the utmost facility; and of many a social circle an intelligent mute is the most attractive member.

"Once more, there is, in some quarters, an unreasonable scepticism as to whether pupils understand thoroughly the ideas which they translate from signs into written language. If an incident were related, or a story told, in French to a class of hearing children, and immediately reproduced in good

English, would there be any reasonable doubt that the ideas were thoroughly comprehended? There is even less room for doubt in regard to a translation from signs. The surest test of the grasp of thought is the ability to express that thought clearly in written language.

"For an illustration of the power of signs to convey thought clearly, perfectly, independently of written or spoken language, I would refer to the translations printed in the appendix to this report. Classes of various grades, from one year to seven years standing, were assembled in the chapel: all witnessed the same telling of the story in signs by the principal, and no other assistance was allowed the pupils. How much each understood, and the ability of each to express ideas in language, will appear from an inspection of the various versions of the story.

"The method of instruction generally employed in the institutions for the deaf and dumb in the United States (about five thousand six hundred out of six thousand pupils being taught by that method) is a broad and comprehensive one, wrought out through long years of experience by such men as Rev. Thomas H. Gallaudet, Mr. Lewis Weld, Rev. W. W. Turner, Drs. H. P. Peet, F. A. P. Barnard, A. L. Chapin, and a host of faithful co-laborers,—men able and candid, ever ready to examine new means and methods and to adopt whatever can be shown to be an improvement, but having too conscientious a regard for the real interest of their pupils to yield their earnest convictions to any mistaken ideas of parents or friends, or to the theories of philanthropists, well-meaning, indeed, but misled by an imperfect or superficial knowledge of facts. Its advocates do not claim that it is a *perfect* system; but they do claim, that, for the instruction of the great mass of deaf-mutes, it is the best system yet devised. When a better way can be demonstrated, they will gladly adopt it."

CLARKE INSTITUTION, NORTHAMPTON.

From the report of the principal of the Clarke Institution it appears that—

"During the year there were seventy-eight different pupils, from six to nineteen years of age. The average number for the year was seventy-seven. Sixty-one were from Massachusetts, five from New York, three from Vermont, two from Indiana, and one each from Canada, Maine, New Hampshire, New Jersey, Ohio, Iowa, and Utah. Of the whole number, two were semi-deaf, and eleven were semi-mutes: only four of whom could read when they entered school.

"There entered during the year nine pupils, from six to seventeen years of age. One of these became deaf at seven, retained speech, but could not read the lips; had attended public school, and had a good use and understanding of language. The other eight were either born deaf, or lost hearing when very young. It would seem as if the figures given above might divest the public of the idea that the majority of our pupils are semi-mute and semi-deaf. Only thirteen out of seventy-eight, or one-sixth of the whole number, can be counted as such, leaving five-sixths of the pupils here taught during the past year to rank as congenital mutes. Another error which should be

refuted is, that the pupils here are selected, and that none are received from very poor or ignorant families. There could be no greater error. Children are rarely seen by us before being admitted to the school, and it would not be easy to find poorer children nor of more ignorant parentage than some that are here. None were ever refused on account of the poverty or ignorance of their parents. There have never been but five pupils here from the New England States whose parents were able to pay board and tuition during the time their children remained in our school. Again, if this institution has been credited with having teachers of special experience, it is a mistake. At the time of the meeting of the Conference of Principals here, when the school was under observation more than ever before, only four out of our eleven teachers had been here more than two years, and two of them less than six months. It has been remarked that our pupils use simple language: this is precisely what we desire. We wish them to *understand* difficult language, but we discourage every attempt to use the bombastic style so common among deaf-mutes.

"Of the graduates of the high class of 1875, one still remains in the institution as special teacher of drawing, and as a regular teacher in the primary school. The mother of one, who became deaf at three years and two months, writes, 'You ever have my deepest gratitude, my warm affection; and, when I compare ——'s education with the other way, oh! I feel that too much cannot be said in praise of the great work you are doing for those poor afflicted children, — giving them the power of speech. —— has acquired much language, and is constantly improving in her speech and lip-reading.' Another has had the care of an invalid sister during the year, and, although she says nothing of her speech and lip-reading, we know they are always her means of communicating with others, and are considered invaluable by herself and friends. Another, who makes herself useful in her home, does not think of resorting to other means of communicating with people than by speech and lip-reading. One young man has just completed his course at Stevens Institute, at Hoboken, N.J., and taken the degree of mechanical engineer. During the two years in the institution he did not acquire sufficient facility in reading the lips to depend upon it after leaving us. He has, however, pursued his studies successfully at Williston Seminary and Stevens Institute. Other semi-mutes might with profit receive instruction as he did, instead of learning the sign-language, and being made to feel that they belong to a peculiar class.

"Another young man, a carriage wood-worker, writes, 'My lip-reading improves some, I think. I do not have much trouble in understanding people, except in the evening: then I miss my hearing considerably.' Of two young men who did not remain to graduate, one is in business for himself as a printer and publisher. His speech and lip-reading are good. The other writes, 'During the three winter months, I had work in Hartford in a fur-store, during which time I found the value of the education I received at Northampton. One time I delivered some goods to a lady, and, as I had to collect some money of her, I spoke to her; and, as she spoke too fast for me, I had to let her know I was deaf. She did not believe it, and I had some difficulty in assuring her of the fact, and her actions made me think she regarded me as an impostor.' All this class became deaf between five and a half and eleven years of age, except the one before mentioned.

"Of the graduates of the high class of 1877, a congenital mute writes, 'About the lip-reading, I think I have improved more this year than last. I think my speech is about the same as a year ago. I think I have improved much in language since school, because I read more, and go with the people more.' He is serving his last year's apprenticeship to a steel-engraver. Another young man, who has been learning wood-engraving about the same length of time, says, 'I think that my speech and lip-reading are about as good as they were a year ago. I do not feel that I have gained or lost in either. I do not think that any thing helps my voice and improves my conversation so much as does reading to some person who can point out the defects in my speech. It has become a pleasure to me now to take up the paper, and read aloud whatever interests me, and I feel that it gives me a habit of pronouncing words correctly and easily. The person who hears me says I read better now than I did a year ago, and she always understands every thing I say.' A friend thinks his lip-reading has improved very decidedly. He became deaf at five years of age. The young lady of that class became deaf at ten and a half years, and has excellent speech and lip-reading.

"Of the graduates from the grammar course in 1878, one who became deaf at seven years of age says, that while staying at the house of her brother, who is an expressman, people came to leave orders for him, and in no case was she obliged to use paper and pencil in conversing with them, and it was not more than once or twice one had to repeat what he said. Few of them knew her at all. Another, who is a dressmaker, says, 'I think I have neither lost in lip-reading nor speech.' She became deaf at four, and lost her speech entirely. A young man, deaf at one year, who is engraving in a watch-factory, thinks he has lost nothing in speech and lip-reading. Another, a congenital mute, not heard from recently, is known to have retained her speech and lip-reading. Of others in the class, who did not remain to graduate, one, partially deaf at two years, perhaps born partially deaf, says, 'Every stranger thinks that I am some hearing fellow. They say that I talk very plain.' He reads the lips well. He spoke but few words when he came to school at five years of age. Another young man, in his father's laundry, is said to read the lips very well. One is working in the largest printing-establishment in Iowa. He says, 'My articulation is about the same as when I wrote last.'"

"Of the graduates of 1880, from the grammar course, the friends of one think her speech remains about the same, but that her lip-reading has improved. She says, 'I very often understand friends when they talk to others. Many strangers understand me readily when I try to talk nicely.' Through a friend, we hear of another whose speech has improved in the last few months. Another we have not heard from, but we know that she will lose neither speech nor lip-reading. The only semi-mute in the class has this year graduated from a public grammar school, and ranked fourth in a class of twenty-five. Much to our disappointment, he is now to learn a trade instead of entering the high school, where he might acquit himself with credit. His lip-reading has been of great service to him.

"A semi-mute, not in school long enough to acquire much lip-reading, has lost nothing in speech. She is a frequent contributor to juvenile peri-

odicals. There remain only five others from whom we have received reports. These were pupils of average attainments. They seem not to have lost in speech and lip-reading since leaving school.

"In the early years of our school, a little one of five years came to us without speech. She remained two years, and since then has been instructed at home, — her mother being devoted to her. Now, at seventeen, she is attending school with hearing children, the same demands being made of her as of the others. She is studying English literature and physiology.

"From all these reports we gather encouragement for the future."

HORACE MANN SCHOOL.

In the report of the committee upon the school it is stated that —

"At the close of the last school year, in June, 1880, there were seventy-nine pupils in this school. Since that time twelve new ones have been added, and eleven withdrawn.

"Fifty-five of the present number of pupils live in Boston, twenty-two in towns in the vicinity, and three come from other States.

"This school suffered from the prevalence of measles and mumps during the winter, as did the other public schools of the city; but these diseases affected chiefly the youngest classes. With this exception the health of the pupils was good throughout the year.

"But one change occurred in the corps of teachers.

"The value of experience, combined with a constant study of the principles of education and with their application to methods of teaching, is perhaps nowhere more evident than in schools for the deaf. Children who have one of the most important avenues to the mind closed forever ought to receive instruction from exceptionally skilful, ingenious, patient teachers.

"The deaf child, on entering school, must be taught the words, phrases, and simple sentences which are used in daily speech, through the constant association of their written forms with the objects and ideas which they symbolize. In this part of the instruction the teachers have found the papyrograph an invaluable aid. To avoid wearisome exercises, as well as to give increasing interest to the acquirement of a vocabulary, illustrated word and sentence lessons have been prepared for the youngest classes. Papyrographic copies of these and of other simple language lessons have supplemented the blackboard work of the teacher.

"In the early part of the school year, the committee in charge received and accepted a proposal for a course of kitchen-garden lessons, including the loan of the necessary apparatus; and the results are highly satisfactory. Once a week a class of twenty-four girls was taught by an experienced teacher. The opportunity to have the apparatus at the school was of great value to the children, who were thus made familiar with the names of household implements and with the language associated with their use. These twenty-four girls will never forget the instruction received in the proper way to lay tables, to sweep and dust rooms, to make beds, and to wash clothes. Their progress in acquiring the language of home life was very marked, and was one of the most important results of this course of object-lessons.

"As during the previous year, a class of girls attended the Boston Cooking School on Saturdays.

"A few weeks before the close of the school year, one of our boys was admitted to an afternoon class at the North End Industrial School, where a practical carpenter gave lessons in the use of tools. Another boy went every afternoon to the shop of a sign-painter to learn that trade. Both of these boys were occupied in their respective shops during the greater part of the vacation, and will probably continue their afternoon lessons during the coming year. Further opportunities for industrial training out of school are earnestly sought by the principal, and will be cordially embraced wherever they are found."

STATISTICS OF BENEFICIARIES.

American Asylum.

Number of Massachusetts beneficiaries Jan. 1, 1881	. . . . .	63
admitted during the year	. . . . .	10
discharged during the year	. . . . .	11
in the institution Jan. 1, 1882	. . . . .	62

Clarke Institution.

Number of Massachusetts beneficiaries Jan. 1, 1881	. . . . .	60
admitted during the year	. . . . .	11
discharged during the year	. . . . .	2
in the institution Jan. 1, 1882	. . . . .	69

Horace Mann School.

Number of Massachusetts beneficiaries Jan. 1, 1881	. . . . .	72
admitted during the year	. . . . .	12
discharged during the year	. . . . .	12
in the institution Jan. 1, 1882	72

Whole number in all the institutions Jan. 1, 1882	203
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Financial Statement.

Appropriated by chap. 17, Acts of 1881	\$40,000 00
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American Asylum.

62 beneficiaries for the term beginning March, 1881,	\$5,425 00	
62 beneficiaries for the term beginning September, 1881	5,425 00	
Clothing furnished beneficiaries for year ending July 1, 1881	446 03	
	<hr/>	11,296 03

Clarke Institution.

60 beneficiaries, quarter ending March 31, 1881	. . . . .	\$2,966 50	
60 beneficiaries, quarter ending June 30, 1881	. . . . .	2,934 36	
60 beneficiaries, quarter ending Sept. 30, 1881	. . . . .	2,966 50	
70 beneficiaries, quarter ending Dec. 31, 1881	. . . . .	3,466 50	
		<hr/>	12,331 86

Horace Mann School.

74 beneficiaries from Feb. 1 to July 1, 1881	. . .	\$3,524 10
70 beneficiaries from Sept. 1 to Feb. 1, 1882	. . .	3,443 59
Extra assistance to beneficiaries for year	. . .	200 00
		<hr/> \$7,167 69

THE PERKINS INSTITUTION AND MASSACHUSETTS SCHOOL
FOR THE BLIND.

Early in the last year the Trustees of this Institution made an appeal to the "generous and benevolent of the community" for a printing fund for the blind. They desired to raise a fund which would yield an income of five thousand dollars a year; and they thought that with such an income the press could be kept in constant activity, and could issue twelve or more volumes per annum.

Extracts from the Appeal.

"The great book of nature, with its myriad pages of beauty, its endless variety of scenery, and its ever-changing aspects of sea and sky, is constantly open to the seeing. The achievements of art can be enjoyed by them at all times and seasons, and literature gives them daily something new and fair to feast upon. How different is the lot of the blind, and how few are the privileges of this sort which they enjoy! Yet even for these children of misfortune a brighter day is dawning, and literature, which is, next to music, their greatest solace, holds out to them its consolations and its joys. Enter a room where some seeing person is reading aloud to the blind, and note the intense interest with which the older members of the group hang on the lips of the reader. How they drink in every word! This is their compensation for all the beautiful things which others enjoy, and from which they are cut off. While a seeing person often grows restless, a blind person sits in an attitude of intense enjoyment and appreciation, draws a long breath when the reading is over, as if it had been almost too good, treasures up all the historic facts or philosophic truths in the storehouse of his memory, and leaves the room enlightened and enriched. Those golden hours are treasures which he never forgets to count over with pride and pleasure. The mention of the title of each well-prized book brings a smile to his face. He has 'lived through' literature, not dreamed over it.

"How more than happy, then, is he, when it offers itself to the tips of his own fingers, when he need look to no seeing person to step in as an interpreter between his author and himself! This is the work to which the most earnest energies of the friends of the blind should now be directed; namely, the foundation of a choice library of embossed books for their personal use. The noble thoughts of great minds were never meant to be shut off from those who are bereft of sight. Hundreds of them have felt, in their solitude and darkness, how cheering and useful is intellectual light. But what they have already received is not enough. They ask for more. Shall their

call be heeded? May we not hope that the voice of the same benevolence which has inspired the hearts of so many noble men and women with a desire to ameliorate the lot of those whose night endures from the cradle to the grave, will whisper to others of high aim and purpose, 'Go ye, and do likewise'?"

In response to this appeal a public meeting was held April 1, in Tremont Temple, presided over by his Excellency Gov. Long. He spoke stirring words full of sympathy for the blind, and of interest in the object which had brought them together. He was followed by other distinguished gentlemen, who bespoke a hearty co-operation on the part of the benevolent.

As a result of that meeting, and of the efforts growing out of it, about forty-four thousand dollars have been raised for the printing fund for the blind; and the hope is that the remaining thirty-one thousand dollars needed to complete the fund will not long be wanting.

The following is compiled from the reports of the Trustees and of the Director:—

Present State of the School.

"The institution continues to be in a flourishing condition, and its influence and importance as the most effective agency for developing the capacities of the blind, and enabling them to become independent workers with hand and brain, increase from year to year.

"The establishment is provided with appliances and apparatus of the most approved kind, and is well appointed in all its departments, which are so arranged as to form a cluster of fruitful branches to crown the solid trunk of the parent tree.

"The business of the school has been carried on in a very satisfactory manner; and the results of its workings, which have been witnessed from time to time during the year by members of our board, have been thorough and solid. This was manifestly shown in the searching examinations, and at the graduating exercises, which were held at the close of the term in the music-hall of the institution.

"In the management of the affairs of the school there is a fixed and definite policy, which consists in adhering to what is good, in improving what is imperfect, in strengthening what is weak but useful, and in adopting what is pointed out by the light of experience and science as best adapted to the wants of the blind.

"The institution entered upon the fiftieth year of its organization in August last, and with the close of the present school session will occur the first semi-centennial anniversary of its existence.

"The time which has elapsed since then has seen wondrous changes; and in no instance more remarkable than in the matter of the education of the blind. The little band of six pupils first gathered together by Dr.

Howe, in his father's house on Pleasant Street, has expanded into whole ranks and files of pupils, graduates, and candidates. Useful blind citizens have finished their honored career, and gone to their graves. Young children are constantly coming to us for the first rudiments of education. Music-teachers, tuners of pianofortes, mechanics, men of business, trained and fitted for the efficient practice of their respective professions and arts under the fostering care of the school, ply their avocations actively in all the towns and villages of New England. The timid blind child, hardly trusting his feet to move alone, or his hands to trace the first letters of the alphabet, to-day walks among us as the self-poised, self-dependent man, managing his own affairs, assisting in those of others, scorning the idea of being a recipient of alms, helpful, respected, intelligent, and industrious.

"In looking over the annals of the Institution, and recounting the changes through which it has passed, and the work it has accomplished, we cannot but see that it has been to the blind of New England what the heart is to the human body, — the centre and source of their mental vitality and power, the spot from which the young, fresh, and bright stream of intellectual and moral light is distributed in every direction to strengthen their character, awaken their dormant powers, and illumine their darkened path in life.

"Increased experience in our work stimulates our energies, and quickens our zeal for its more thorough and satisfactory performance. Full well we know that we are far from having reached the highest attainable point; and yet we cannot but hope that the amount of positive good gained, and of evil removed, through the agency of the school from year to year, is steadily increasing. A mere repetition, however, in a perfunctory fashion, of what has hitherto been done, or the performance of approximately the same work in a somewhat better manner, is not sufficient. In order to advance the cause of the education of the blind, and bring it within the limits indicated by science and prescribed by the nature of their case, we must strive to overcome more difficulties, and to surmount every obstacle that can be reached by human perseverance.

"The number of pupils is rapidly increasing. There never were so many young children, and particularly little girls, received at the beginning of any previous school session as this year. Most of them seem to be quite intelligent and promising; while in a few cases the disease which has caused the loss of sight has undermined the constitution, and weakened the mental faculties.

"A system for the efficient and proper training of the blind, in order to be successful and productive of good results, should be adapted to the special requirements of their case, and calculated to meet the exigencies resulting from their affliction, and to promote the full development of their remaining faculties, and the harmonious growth of their powers. It should constitute a sort of physical, intellectual, and moral gymnasium, preparatory for the great struggle in the arena of life, and should include that finishing instruction as members of society which Schiller designated as the 'education of the human race,' consisting of action, conduct, self-culture, self-control, — all that tends to discipline a man truly, and fit him for the proper performance of his duties, and for the business of life. A mere literary drill, or

any exclusive and one-sided accomplishment, cannot do this for the blind. It will prove insufficient and incomplete at its best. Bacon observes, with his usual weight of words, that 'studies teach not their use; but there is a wisdom without them and above them, won by observation;' and all experience serves to illustrate and enforce the lesson, that a man perfects himself by work blended with reading; and that it is life elevated by literature, action quickened by study, and character strengthened by the illustrious examples of biography, which tend perpetually to purify and renovate mankind.

"Mechanical teaching has been persistently avoided; and the system of requiring the pupils to commit stolidly to memory the contents of text-books, to recite meaningless rules glibly, and to learn crude and obscure statements of abstract theories and wordy definitions by heart, has no place whatever in our school. On the contrary, the time is devoted to the nurture of the intellectual faculties, to the development of the mental powers from which ideas are born, and to the acquisition of those great truths which relate to the happiness of the human race, and to the general welfare of mankind.

"In the primary departments of the school the educational processes have been pre-eminently objective, synthetic, inductive, and experimental; while in the advanced divisions they have been subjective and analytic as well, — deductive as well as inductive, and philosophical as well as experimental. In the high classes a broad and deep foundation has been laid for future achievement. Here the pupils have attained a good degree of scholarship and culture, which increases the strength and fertilizes the resources of their mind. Here they have been taught how to command their powers, and direct their energies. Here they have been furnished with all available facilities to prepare themselves for a useful career in life.

"Kindergarten and Object-teaching.

"The blind usually experience great difficulty, not only in getting a clear idea of things from mere descriptions, but obtaining by feeling correct notions of the forms of objects to which they have not been accustomed; and this is a serious drawback to their acquiring much valuable and practical information. This difficulty arises, not from any general defect in their powers of sensation, — for these are in the majority of cases not in the least affected by the causes which produce blindness, — but rather from the want of a special and thorough training of the sense of touch.

"To remedy this important evil as far as we may, and at the same time to awaken and exercise the powers of observation, comparison, combination, invention, memory, reflection, and action, the kindergarten system and object-teaching have been found among the best and most efficient auxiliaries; and both have received due and earnest attention in our school.

"The workings of the system in our school have been most beneficent. Children who seemed entirely helpless, and had no command whatever of their hands, have been roused to energy and activity by the agency of the kindergarten. Through the simple but interesting and attractive occupations of block-building, weaving, embroidery, moulding in clay, and the like,

they have acquired a great degree of muscular elasticity and manual dexterity, which assists them in tracing on the maps with alacrity, in deciphering the embossed print easily, in tying the strings of their shoes neatly, in stringing beads promptly, in using their needle adeptly, and in doing a number of things readily which they would have felt unable to undertake without this training. Modelling is particularly beneficial to the blind: it helps them to acquire a more or less correct idea of forms of various kinds, which it is almost impossible for them to obtain by the mere handling of objects.

"Kindergarten work may thus be likened to the exercises given to beginners in music, which prepare the student for rendering difficult pieces more brilliantly; and no training of primary classes of blind children can attain a high degree of efficiency without its assistance."

The total number of blind persons connected with the institution the last year was	148
Admitted during the year	26
	<hr/>
	174
Discharged	19
	<hr/>
	155

Ordinary expenses for the year ending Sept. 30, 1881, \$47,290 82

Extraordinary expenses, improvements, etc. 8,988 52

Total	\$56,279 34
The total amount of invested funds, including printing-fund, is	170,97 040

INCOME OF MASSACHUSETTS SCHOOL FUND.

Cash on hand Jan. 1, 1881	\$70,040 77
Income during the year 1881	138,774 88
	<hr/>
	\$208,815 65

Paid cities and towns in 1881	\$69,007 81
Educational expenses in 1881	69,349 94
Income of fund 1880	1,032 96
For premium on note purchased	75 00
	<hr/>

School Fund, balance of Educational Moiety, 1880	139,465 71
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Cash on hand Dec. 31, 1881	\$69,349 94
From which there is to be paid cities and towns one-half income for 1881	69,349 94

The Massachusetts School Fund amounted,

Jan. 1, 1881, to	\$2,075,540 73
Balance of Educational Moiety, 1879	11,346 28
	<hr/>

Amount of fund Dec. 31, 1881	\$2,086,887 01
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ANALYSIS OF THE SCHOOL RETURNS.

The returns furnished by the school committees of the several cities and towns of the Commonwealth show an increase in the number of persons between the ages of five and fifteen years of 5,359, and an increase in the number of schools of 138. This increase in the number of schools is about what might be expected from the increase in the number of persons in the enumeration; for, were those equally distributed among the 138 schools, it would give nearly 40 pupils to each school. All the counties in the State, except Nantucket, Norfolk, and Suffolk, report an increase in their enumeration, and some of them quite a large one. Essex reports 1,377 increase; Hampden, 1,129; Middlesex, 2,099; and Worcester, 1,847: while Suffolk reports a decrease of 2,826.

The enumeration made May 1, 1880, shows that there were 312,680 persons of school age; while the enrolment shows that the entire membership in all the schools for the year was 325,239, — a number greater than the enumeration by 12,559.

This does not indicate an error either in the enumeration or the enrolment; for the 25,000 pupils, more or less, in the schools over fifteen or under five years of age, and those who became five after May 1, and found their way into the schools during the year, are not included in the enumeration, but are in the enrolment. The average membership has been slightly greater than it was last year, but not enough to change perceptibly the per cent of attendance based upon it.

Only 281 towns report having made, even in part, the provisions required by law concerning truants, and this leaves 65 which have not complied with the statute. There seems to be an unwillingness on the part of some county commissioners to provide truant schools.

By their refusal or neglect, the commissioners are violating a wise and necessary statute of the Commonwealth, they are greatly increasing the difficulties the towns need to experience in providing for their truant children, and they are rendering the towns of their counties liable to lose their share of the income of the School Fund.

There is no subject connected with school attendance that demands more serious and earnest attention than truancy. School committees and teachers have for many years com-

plained of the difficulties connected with an efficient discharge of their duties in the management of truant children. No proper disposition can be made of this class of children until a suitable place is provided by the town or county for their confinement, discipline, and instruction. A proper place is a school organized with all the facilities for exerting a good moral influence over the children, at the same time it provides a good common-school and industrial education. The truant class must not be neglected. Crime and pauperism are more expensive to a State than education, and a free State cannot afford to have a single person within its limits growing up in ignorance.

The money expended for support of schools, including only wages of teachers, fuel, and care of schoolrooms, is \$4,130,714.11; and this, equally distributed among the persons found in the enumeration, gives to each \$13.21.

If to the item above, \$4,130,714.11, be added the cost of supervision (\$159,313.79), of printing school reports (\$12,450.45), and cost of books, stationery, maps, globes, and schoolroom supplies (\$291,728.40), the entire amount raised by taxation and expended upon the public schools becomes \$4,594,206.75; and this, equally distributed as before, gives to each \$14.693.

If to the amount raised by taxation, \$4,594,206.75, and expended upon the schools, there be added the amount not raised by taxation, — namely, the income of funds as surplus revenue, or the dog-tax, appropriated to schools by the action of the towns (\$183,072.36), voluntary contributions (\$5,279.63) and the income of the State School Fund (\$69,007.81), — it gives an amount of \$4,851,566.55; and this, distributed as before, gives to each \$15.516.

If to this amount, \$4,851,566.55, there be added the amount laid out upon school-buildings, — for new houses (\$535,895.37), for permanent improvements (\$267,545.67), and for ordinary repairs (\$121,534.16), — the entire expenditure for all public-school purposes becomes \$5,776,541.75; and this, distributed as before, gives to each person in the enumeration \$18.474.

SCHOOL LEGISLATION.

Massachusetts, throughout all the years of her history, has manifested an intense and intelligent interest in popular education.

COLONIAL LAWS.

As early as 1635 the inhabitants of Boston gave public expression to their ideas of the value and need of a public school for the teaching and nurturing of the children. In 1636 the General Court authorized an appropriation of four hundred pounds, for the establishment of a school or college. The school was established at Cambridge, and has since become Harvard University.

The first educational ordinance of the Colony was passed in 1642. "It required the selectmen of every town to have a vigilant eye over their brethren and neighbors, to see that none of them shall suffer so much barbarism in any of their families as not to endeavor to teach, by themselves and others, their children and apprentices so much learning as may enable them perfectly to read the English tongue, and [obtain a] knowledge of the capital laws."

A failure to comply with the ordinance was punished by a fine of twenty shillings.

The Act of 1642 enjoined upon the municipal authorities the duty of making education universal, but not necessarily free.

In 1647 another law was passed, making the support of public schools compulsory, and education universal and free. As this was the first law of the kind ever passed by any community of persons, or by any State, Massachusetts may claim the honor of having originated the free public school. At this time it was ordered that every town of one hundred families, in addition to its elementary schools, should establish and maintain a grammar school, which should fit pupils for the University at Cambridge.

In 1683 all towns of five hundred families were required to maintain two grammar schools and two writing schools.

These were the principal laws establishing and regulating the schools during the colonial period.

STATE LAWS.

In 1789 a general act was passed requiring every town to maintain one school for the term of six months, or two or more schools for terms of time that shall together be equivalent to six months, in which should be taught orthography, reading, writing, English grammar, geography, and decent behavior.

At this time it was ordered that the towns be divided into districts, for the purpose of facilitating the attendance of the children upon the schools. The schools were still to be under the direct control of the towns.

It was further ordered that towns of two hundred families, instead of one hundred, as before, should constitute the minimum number for supporting a grammar school, and that teachers should have a certificate of good moral, as well as intellectual, character.

In 1800 an act of the Legislature authorized the selectmen of the towns to call district meetings, at which the legal voters therein should raise money for building schoolhouses, and for supplying them with all necessary furniture.

In 1817 school districts were made corporations, and were empowered to hold property for the use of the schools.

In 1826 every town containing five hundred families was required to maintain a town or high school, which should differ from the old grammar school by omitting, from its curriculum of studies taught, the Latin and the Greek languages.

If the town contained four thousand inhabitants, it was required to maintain a higher grade of high school, in which the classic languages were to be taught.

The school law of 1826 was the first to require towns to elect a town school committee.

By a law passed in 1827, school districts were authorized to take care of their schoolhouses, and to contract with their school-teachers.

The returns of 1832 made it appear that the average amount paid for each pupil attending the public schools was \$1.98. From the returns made in 1834 it was known that about five-sixths of the children of school age were in the public schools, while, as was supposed, the remaining one-sixth was in the private schools of the State. In the same year an act was passed making it unlawful to employ children under fifteen years of age in any manufacturing establishment, unless they had attended school the year next preceding for at least twelve weeks.

The Massachusetts School Fund was established in 1834. The act by which it was established provided that all moneys in the treasury derived from the sale of lands in the State of Maine, and from the claims of the State on the government of

the United States for military services, and not otherwise appropriated, together with fifty per centum of all moneys thereafter to be received from the sale of lands in the State of Maine, should be appropriated, to constitute a permanent fund for the aid and encouragement of common schools, provided that said fund shall never exceed one million of dollars. The limiting clause of the law has been amended, and the fund at present exceeds two million dollars.

The Board of Education was established in 1837. It consists of the Governor, Lieutenant-Governor, and eight persons appointed by the Governor, with the advice and consent of the Council. Each of the eight is appointed to hold office for eight years. The duties and powers of the Board are defined by the statutes. They are to hold in trust for the Commonwealth any grant of land and donation or bequest of money or other personal property made to it for educational purposes.

They are to prescribe the form of registers to be kept in the schools, and the form of the blanks and inquiries for the returns to be made by school committees. On or before the third Wednesday of January they are to lay before the Legislature a report containing a printed abstract of returns, and a detailed report of all the doings of the Board, with such observations upon the condition and efficiency of the system of popular education, and such suggestions concerning the best means of improving it, as the experience and reflection of the Board may dictate.

The Board may appoint its own secretary, whose duties are also prescribed by statute. Under the direction of the Board, he is to make an abstract of school returns; collect information concerning the public schools; diffuse as widely as possible throughout the Commonwealth the best system of public instruction; visit, as often as other duties will permit, different parts of the Commonwealth; receive and arrange the reports of school committees, and distribute the State documents relating to the public-school system.

The secretary is also required to attend such meetings of teachers of public schools, members of school committees of the several towns, and friends of education, as may assemble for the purpose of discussing topics connected with the management of the schools; and he is at these meetings to devote himself to the object of collecting information relating to the condition of

the schools, to the fulfilment of the duties of their office by members of the school committees in the towns and cities, and to furnish all information desired for the report of the Board.

The Board may appoint one or more suitable agents to visit the towns, confer with teachers and committees, lecture upon subjects connected with education, in the same manner as the secretary might do if he were present.

In 1839 our two oldest normal schools were established,—one at Lexington, now located at Framingham; the other at Barre, now located at Westfield.

The law making education compulsory for all children between the ages of eight and fourteen was passed in 1846.

In 1859 the towns were first required by law to maintain a sufficient number of schools for all the children of school age, and each school for not less than six months.

By an act passed in 1850 the school committees were authorized to introduce into the schools the study of physiology and hygiene.

Algebra in 1858 was classed with physiology and hygiene, and their introduction made optional with the committees.

In accordance with a petition made by many citizens, an act was passed in 1869 including drawing in the course of studies for public schools.

In 1876, by a legislative act, it was made illegal to employ any child under ten years of age in any manufacturing, mechanical, or mercantile establishment in the Commonwealth; to employ any child under fourteen years of age, except during vacations of the public schools, unless during the year next preceding such employment he has for at least twenty weeks attended some school approved by the school committee. In 1878 a law was passed forbidding the employment, while the schools of the town or city are in session, of any child under fourteen years of age who cannot read and write.

A truant, as defined by the statutes, is a child between the ages of seven and fifteen years who may be found wandering about the streets or public places of a city or town, having no lawful occupation or business, not attending school, and growing up in ignorance. In 1873 the towns and cities were put under legal obligation to make all needful provisions and arrangements for truant children; to make such by-laws as shall best promote the welfare of such children and the good order of the towns;

and to provide suitable places for the confinement, discipline, and instruction of such children. It has already been said, that to provide a suitable place is to establish a truant school, and to organize it so as to supply the wants of truant children.

To lessen the expense to be borne by each town in establishing truant schools, if three or more towns in any county so require, the county commissioners shall establish, at the expense of the county, truant schools, to which all the towns of the county may send their truant children. To still further lessen the expense, an act was passed in 1881 permitting two or three contiguous counties — or in case of Norfolk, Bristol, Barnstable, and Plymouth Counties, four contiguous counties — to unite and form a Union Truant School, into which the towns of the counties uniting may send their truants.

From what has been said it will appear that the organization and control of the public schools of the Commonwealth are determined by acts of the Legislature, and that our system of schools is a State system.

It is the policy of this State to require a sufficient number of schools to be maintained for all the children of school age, to determine what branches of learning shall be taught, to require all school-children to go regularly to school, to place over the schools teachers of competent intellectual and moral ability to direct the youth under their care to the best intellectual and moral results.

Since the organization of the Board of Education, in 1837, a uniform State system of schools has been created, a comprehensive plan of collecting accurate school statistics has been established, six State normal schools for the professional training of teachers have been organized, and methods of teaching have been improved. In addition to these changes, laws have been passed requiring the use of a uniform method of selecting and examining teachers, establishing uniform courses of studies for the different grades of schools, and a minimum time of attendance by the pupils; and there has been awakened in the minds of the people a deeper and more general interest in popular education.

This interest in the schools is now manifested in many ways, and first by the amount of money voluntarily raised for their support. Last year Massachusetts expended \$5,776,541.75 for public instruction alone, — an amount equal to \$18.474 for every

child in the State between five and fifteen years of age, or 3.5 mills on every dollar of her taxable property. In 1832, as already stated, the average amount per pupil was \$1.98.

2d, The interest now taken in the schools is manifested by the school attendance secured.

There were in the State, on the 1st of May last, 312,680 children between five and fifteen, and there were in the public schools 325,239 pupils. The per cent of attendance based on the average membership was 89; and the average length of time of attendance was eight months and eighteen days. The per cent of attendance based on the entire membership was 77, — the highest average attendance of any State of the United States, as reported by the Commissioner of Education.

Never before in the history of the State have the public-school teachers been so thoroughly interested in preparing themselves for their work.

The State normal schools and the city training schools are well filled with earnest students, studying the philosophy of teaching, and practising for skill in the application of principles.

Many of the cities, and every county of the State, have their teachers' associations; the former meeting once a month, the latter once or twice in the year, for conference and discussion.

Once in the year the teachers of the whole State come together in one place for a general discussion of those topics in popular instruction that hold a relation to the Commonwealth as one whole.

Within the last four years there has sprung into existence a new organization of educational forces. I refer to school committee associations. There are now nine of these associations, and they meet twice in the year for the purpose of discussing those questions that refer especially to the duties of superintendents of public instruction.

The results of these meetings have been most marked.

Four of the conventions have appointed sub-committees to draught courses of studies for the schools of their own respective counties. These courses are now in use.

There has resulted also an awakening of the public mind in regard to the importance of securing a better attendance upon the public schools.

One county truant school has already been established, and others will soon come into existence.

The committees, in their deliberations, have considered the imperative necessity of securing trained or experienced teachers for the schools, and of adapting methods of teaching to the wants of the minds of those who are to be taught.

They have resolved to furnish the schools with more adequate means of teaching and study. They have approved of reducing the number of schools in the towns to the smallest number consistent with their efficiency; and they have unanimously and emphatically resolved in favor of placing over all the public schools of the Commonwealth an educated superintendence.

The school committees of the State are the legally constituted school authorities. Upon them the State has imposed the duty and the responsibility of organizing and supervising the schools, and has clothed them with authority equal to their duties and responsibilities. It seems eminently proper, therefore, that these officers of the Commonwealth should organize themselves into associations for mutual improvement.

But notwithstanding the wisdom manifested by the fathers in founding our educational institutions, and the philanthropic efforts of all the generations that have followed them in cherishing what the fathers originated, still there is earnest, intelligent, persevering work to be done, to bring into existence such educational results as our schools ought to produce.

The school laws of the Commonwealth are supposed to express the will of the people with reference to the schools.

It is the duty of the school officers of the State to use the authority which the statutes confer upon them in collecting all the children of school age into such schools as the people have willed to exist.

To this end our school laws, now in force in the Commonwealth, must be fully understood and carefully observed. I desire to direct attention briefly to those statutes, in obedience to which our schools are to be established and organized.

By the statute, chap. 44, sect. 1, of Pub. Laws, —

“Every town in the Commonwealth is required to maintain for at least six months in each year, at the expense of said town, by a teacher or teachers of competent ability and good morals, a sufficient number of schools for the instruction of all the children who may legally attend public school therein, — in orthography, reading, writing, English grammar, geography, arithmetic, drawing, the history of the United States, and good behavior.

Algebra, vocal music, agriculture, sewing, physiology, and hygiene shall be taught by lectures or otherwise, in all the public schools in which the school committee deem it expedient."

It will be observed that this statute requires a sufficient number of schools to be kept, but it does not determine the exact number that may be deemed sufficient in any given case.

The number must be sufficient for all the children who may legally attend school; but the statutes do not specify any age at which children may enter school, nor the age to which they may continue. There is in the Commonwealth no legal school age. The school committees, therefore, under their general power of superintendence, may determine how many schools are a sufficient number, and what shall be the limit of attendance.

The law, however, compels the attendance of all children between the ages of eight and fourteen for twenty weeks in the year; but the committees may admit pupils before they are eight, and continue them until after they are fourteen.

It is of great importance to the schools and to the towns that no more than a sufficient number of schools are attempted to be maintained.

If the schools are small, money, time, and efficiency are sure to be wasted.

A school of thirty pupils may be supported almost as easily as one of five.

A teacher can teach the one in the same time as is required for the other, and with far greater enthusiasm.

Pupils also are stimulated by the presence of numbers, and they always accomplish more in classes of a proper size.

I would, then, recommend that the towns unite their very small schools, if they happen to have any, into larger ones. If necessary, a small appropriation may be made for the transportation of those pupils who would otherwise be obliged to walk a long distance.

This plan is already adopted in many towns, and wherever it has been faithfully tried it has proved eminently satisfactory.

Have the school committees a right to determine the number of schools a town shall maintain?

The courts have decided that the power of general superintendence vests a plenary authority in the committee to determine

how many schools shall be kept, and to arrange, classify, and distribute pupils in the various schools of the towns as they think best adapted to their general proficiency and welfare.

I have named the course of studies for the elementary schools which the statute prescribes for them; but this is a minimum course. By another statute power is granted to the committees to prescribe a course of studies and exercises for the schools.

In making out this course the committees would not be at liberty to omit those branches of study enumerated in chap. 44, sect. 1, of the Public Statutes; but they would have a right to make such additions as the spirit of the statute will permit.

Whatever change is made, it is of great consequence that it be a wise one.

The value of a good course of studies will appear when we consider what such a course is adapted to accomplish.

1. It will determine the kind of knowledge the student will obtain.

2. The knowledge will determine the kind and degree of mental activity the mind will exert in gaining possession of the knowledge.

3. The activity will give character to the mental training received, as it is the efficient cause of this training.

To make a proper course of studies, then, one must know what knowledge is most useful for the pupil to know, and what will call the mind to the most useful exertion of its own power.

He must know also what order of studies will be best adapted to the wants of the mind in its different stages of development.

With a knowledge of all these things, the skilled educator puts himself to the difficult task of constructing a course of studies for the public schools.

The course already described is for the elementary schools. In addition to this, the statutes provide courses for the two grades of our secondary or high schools.

“ Chap. 44, sect. 2, of the Public Statutes requires every town containing five hundred families or householders to maintain a high school to be kept, for at least ten months in the year, by a master of competent ability and good morals, who, in addition to the branches of learning before mentioned, shall give instruction in general history, book-keeping, surveying, geometry, natural philosophy, chemistry, botany, the civil polity of this Commonwealth and of the United States, and the Latin language.

“ And in every town containing four thousand inhabitants there must be maintained a school taught by a teacher or by teachers of competent ability

to give instruction in the branches already enumerated, and also in the Greek and French languages, astronomy, geology, rhetoric, logic, intellectual and moral science, and political economy."

From the courses of studies required to be taught in the public schools it may be seen that what is called our system of schools is made up of two distinct grades of educational institutions. In the lowest grade are to be taught the elements of knowledge; in the highest the elementary studies are to be pursued as sciences.

The two grades form a complete system: neither can be omitted without leaving out a part of a whole.

The elementary schools teach facts, and train the powers that observe them.

The secondary schools teach scientific knowledge, and train the mind to reflect.

In the one, simple facts are observed; while it is reserved for the other to lead the minds of the pupils to discover those general principles and rules of conduct that guide one to a successful individual life, and enable him to become a good citizen in a free Commonwealth.

It should not be forgotten, in judging of the value of secondary instruction, that elementary knowledge, or a knowledge of facts, is worth nothing in itself except to furnish the data from which universal truth may be derived.

It is of little consequence to know how to perform a problem presented to us in a book, unless we can derive from it a general principle, a knowledge of which will enable us to perform all problems of that kind. It is not important for us to know the fact that there are mountains on the surface of the earth, unless we also know the causes which made them, and the effects they produce.

The first knowledge is limited to individual things, the other is of universal application.

It is only as we gain general knowledge, and a knowledge of the causes of the phenomena about us, that we are preparing ourselves for the life we are to live.

Our individual necessities, our form of government, and our civilization, render our secondary schools a necessity.

Our high schools do more than offer to all the children just that education which alone can fit them for the duties of private

and public life. They also stimulate into a greater efficiency all the schools below them.

It is said that the elementary schools of Germany are the best in the world, because the higher schools are open to all classes.

They encourage the pupils to pass through all the lower grades of their educational work, that they may pass into the high school, and reap the advantages of scientific study. They stimulate the lower schools to more efficient work, that their pupils may be well prepared for the pursuit of secondary knowledge.

They control the methods of teaching practised in the lower schools, and they modify the courses of studies taught in them.

The secondary schools do more than any other means we have towards producing and preserving that social equality which forms the basis of republican institutions.

High-school training is necessary as a foundation for successful industrial training.

In all countries where secondary instruction is within the reach of the people, there the people outstrip all others in the pursuit of the industrial arts.

The higher the civilization of a community, the more perfect its intelligence concerning those social conditions out of which spring the most perfect social state, the more steadily and generously are supported the secondary schools.

There are now in the Commonwealth two hundred and fifteen high schools, furnishing an opportunity to over ninety per cent of the entire population of the State to obtain a good secondary education. Nearly forty towns voluntarily support these schools, believing with the fathers that the elementary schools are wholly inadequate as a means of public instruction.

The towns are not only required to establish a sufficient number of schools for all the children who may legally attend school therein, but they are also required to see to it that the children go regularly to school.

In securing this end, the results of which are vital to the Commonwealth, they are to be aided by the co-operation of all in authority, and of all citizens.

It is to be hoped and expected that no parent or guardian of a child of school age, in this Commonwealth, will voluntarily detain him from school, unnecessarily, for a single day of that short time of attendance required by law.

If a parent or guardian fails to send his child to school twenty weeks each year, ten of which shall be consecutive, he violates the compulsory law, chap. 47, sect. 1, and renders himself liable to its penalty.

If the employer of children is in fault, then the laws (chap. 48, Pub. Stat.) limiting their employment will remind him of his public and private duties.

If the child has no one to look after his early training, but is wandering about the streets, without employment, and is growing up in ignorance, then the truant laws take him up, and place him where he can be made the constant object of good instruction.

The statutes require every town in the Commonwealth to provide a place for the confinement, discipline, and instruction of truant children.

On the blank forms, sent out by the Board of Education to the school committees of the towns, to be filled out and returned, is this inquiry: Has your town obeyed the laws relating to truancy?

The answer "*yes*" implies, —

1. That the town has provided a place for its truants.
2. That it has adopted a code of by-laws to guide its truant officers in the discharge of their duties.
3. That the school committee of the town have appointed the truant officers, who, under the direction of the committee, are executing all the laws relating to the school attendance of all the children of school age.

These three acts must be faithfully performed, as conditions for receiving a share of the income of the State School Fund.

Although the laws relating to attendance are comprehensive enough, and definite enough, if faithfully executed, to put all the school-children into school, still it is not expected that in a highly civilized, free State, like Massachusetts, whose existence as a free Commonwealth depends upon the proper education of all the people, the children will need to be forced into the public schools. As a fact, the voluntary attendance in Massachusetts has reached a higher per cent than is to be found in any other of the United States.

And yet twenty-three per cent of the children between five and fifteen years of age is too large a number to be away from the public schools; much too large for either the safety or the prosperity of the State.

The children should not only be enrolled on the school registers, but they should be constant in their attendance.

Parents do not always know the mistake they are making, when they, without sufficient reason, either allow or require their children to be absent for a time from their classes.

In this way they violate the spirit of the law, and they inflict a great injury on the schools to which the pupils belong, and they do an irreparable wrong to their children.

One of the conditions of a good school is a punctual and constant attendance of all the pupils upon all the school exercises of the term. A successful school cannot exist without this condition exists also, and these are some of the reasons:—

1. As the lessons in each of the branches pursued should bear a logical relation to one another, if the pupil loses one lesson, he has lost the connection between what he has already studied and what he is yet to learn. At the end of his broken term he will find his knowledge to be a miscellaneous mass of unrelated facts.

2. Irregularity in attendance leads to the formation of bad habits, and the effect of it will be surely seen when the pupil comes to perform the duties of practical life.

3. The absence of some pupils inflicts an injury on the class to which they belong.

The class will be delayed, and its enthusiasm taken away, by the slow progress and want of interest of those who have their attention divided between work or play at home, and study at school. Neither absence nor tardiness can be endured by a school that attempts to secure the best results. The statutes require a regular attendance of at least twenty weeks of every school year. Many school committees insist upon a constant attendance as a condition of a continued membership of the schools; and every wise parent will see to it that nothing under his control shall interfere to prevent his child from being regularly in his place every morning during his short school life.

A regular and full attendance upon the schools is so necessary that the statutes of the Commonwealth make it to be the duty of all to co-operate in securing this result.

It shall be the duty of the resident ministers of the gospel, the selectmen, and the school committees, to exert their influence, and use their best endeavors, that the youth of their towns shall regularly attend the schools established for their instruction.

SCHOOL-TEACHERS.

Chap. 44, sect. 28, of the statutes requires the school committees to contract with the teachers of the public schools.

The committees are to require full and satisfactory evidence of the good moral character of all instructors employed by them ; and they are to ascertain, by personal examination, their qualifications for teaching and capacity for the government of schools.

It is required of every instructor of a town or district school, that he obtain from the school committee a certificate in duplicate of his qualifications, one of which shall be deposited with the selectmen before any payment is made to such instructor on account of his services. Then, if the teacher keeps his register according to the forms prescribed, he shall be entitled to his wages.

The school committee may dismiss from employment any teacher whenever they think proper, and such teacher shall receive no compensation for services rendered after such dismissal.

The schools must be supplied with good teachers, or they will be failures, notwithstanding all that external agencies may do for them.

Once it was thought that almost any one could teach school, — especially a primary school, because the teacher's work is so simple and so easily done.

Now it is beginning to be known that one must have had a successful experience or a thorough professional training before he can teach in a satisfactory manner.

The country is not full of perfect teachers. We may think it is ; but, when a necessity compels us to look for one, then we discover, to our surprise, that there are almost none to be found.

To teach well requires an extensive and accurate knowledge of the branches to be taught, a knowledge of the human faculties, and of a method of teaching based on this knowledge.

It requires also the power of self-control, a cultivated taste, a good common judgment, a successful experience, and an unlimited enthusiasm.

A good teacher should be retained quietly and for a long time in his place : —

1. Because there are so few good teachers to be found.
2. Because a good teacher is a necessary element of a good school.

3. Because waste will always be caused by any change that can be made, except it be from a poorer to a better teacher.

A skilful, faithful teacher is one of the richest blessings that can be granted to any community. It should be remembered, that, in choosing a teacher for our children, we are choosing the characters we would have them possess.

The teacher should be trained to a good method of teaching, and it should be his special object to communicate to his pupils a good method of study.

At a recent meeting of the Education Society in England, a discussion on elementary science teaching ended in these conclusions: that natural knowledge, or a knowledge of natural objects, should be taught, not from books, but from things themselves; that the lessons should not consist of information committed to memory, but of knowledge acquired by the child's own observation and experience; that by object-lessons he should be led to observe the natural facts around him, and to exercise his own powers of observation and comparison, and in this way to acquire his own knowledge and the true method of learning.

The ends to be secured by study are three:—

Knowledge, mental training, and a method of thinking.

These ends are to be occasioned by such a method of teaching as will bring the true object of study into the presence of the pupil, and will require him to study it by an exercise of his own active power.

SUPERINTENDENCY.

“The school committee in each city or town where there is no superintendent of schools, or some one or more of them, for the purpose of organizing and making a careful examination of the schools, and of ascertaining that the scholars are properly supplied with books, shall visit all the public schools in the town on some day during the first week after the opening of such schools, and also on some day during the two weeks preceding the close of the same; and shall also, for the same purposes, visit, without giving previous notice thereof to the instructors, all the public schools in the town once in each month; and they shall at such examinations inquire into the regulation and discipline of the schools, and the habits and proficiency of the scholars.”

This act of superintendence of the schools is a most important one for their welfare and good conduct.

It requires learning and experience and time to organize a school, to make out a good course of studies for its use, to select good teachers, to introduce them into their office by a proper examination, to plan out a good method of teaching, to select good school-books, and to be able to direct the internal affairs of the schools to the best results. That this may all be done, the school committees of the Commonwealth should be supplied with educated men to act under their authority, as their agents in doing that which is properly implied in school supervision. Such a change would save us from a vast amount of waste now caused by a want of experience and philosophy in the administration of our educational interests.

In organizing the schools the first means to be provided are properly constructed schoolhouses. If we compare the ancient schoolhouses with those of modern times, we shall find in the difference a good expression of that change in public sentiment which shows a growing appreciation of the wants and the value of our public educational institutions. The ancient structures made no pretensions to comfort or to architectural beauty. They were generally small, imperfectly lighted, and utterly without ventilation, except through open windows and doors, and through the cracks which the forces of nature had opened in their loose coverings. They were wholly exposed to the fierce rays of the summer's sun, and they were warmed in winter by methods which put the different parts of the body of every child into widely different temperatures at the same time. They were frequently located on the top of some high barren hill, or crowded into some narrow waste place in the valley just wide enough to receive them. Not much attention was paid in their construction to proportion or to ornament. Nothing was added without to break up the monotony of stiff outlines, or within to relieve the sobriety of barren walls. A plain enclosure was constructed, and the schoolhouse was ready for the children.

The school furniture was of the same character as the building it furnished. It was constructed without much reference to comfort or to health. The growing bodies of the young pupils were warped out of shape as they sat day after day on their poorly contrived seats; while the purity of their blood was disturbed by the bad air they were compelled to inhale, and the health of their eyes was destroyed by the glaring light that fell

direct upon them, or by the darkness in which many of the old schoolrooms were enveloped. Our modern schoolhouses are improvements on the old; but still they are defective in their means of ventilation, lighting, and heating, and in almost all those contrivances that have reference to the physical well-being of the pupils.

It may not be out of place to give a few hints concerning the points that should attract attention in building and furnishing schoolhouses.

SCHOOLHOUSES.

Situation. — The schoolhouses for the public schools should be in pleasant places, away from every thing that can disturb the quiet activity of the mind or the health of the body. "The very place of instruction should be rendered as attractive as possible, on account of the educating influences of external things." The school-grounds should be elevated somewhat above the general level of the surrounding country, and they should slope towards the south. If elevation and slope are observed in the selection of school-grounds, they can be easily drained, and the schoolhouse will be exposed to currents of fresh air, and to the more direct rays of the sun. The soil of the grounds selected should, if possible, be sandy or composed of loose gravel. In either case the water that falls upon it and does not flow off will be quickly absorbed or evaporated. It would be well carefully to avoid building on grounds formed by earth deposited over low and swampy places; for the gases that would work their way from below to the surface would endanger the health of all exposed to their effects. The grounds should be of sufficient extent to allow ample room for the healthful exercise of the pupils. In the case of mixed schools, the play-grounds should be divided by enclosures into two parts, and one assigned to the boys, the other to the girls.

Building-Material. — Economy and comfort are more fully secured in building schoolhouses by the use of either stone or brick than of wood. The first cost of stone or of brick buildings may be more than if constructed of wood; but when durability is taken into account, as it always should be in the construction of public buildings, economy favors the use of the more solid materials. Comfort is more fully secured also by the use of such materials, as they are better adapted to furnish the conditions of an even temperature both in summer and in winter.

Size. — The size of the school-building must be determined by the number of pupils that are to occupy it. The best authorities are of the opinion that at least two hundred and fifty cubic feet of space in the schoolroom should be allotted to each pupil. This amount would allow to each twenty square feet of surface in a room twelve feet and a half in height. Very large schoolrooms are not desirable. If the school contains a large number of pupils, it is better to arrange them in separate rooms under the supervision and instruction of teachers who may hold the relation of assistants to the principal.

Form. — The shape of the main schoolrooms should be that of an oblong whose width should bear to its length the proportion of two to three.

The teacher's desk and platform should be on the north side of the room, the latter being elevated about eight inches above the floor. The door through which the pupils enter the school room should be on the south side, and open outwards, as should all the doors of the building.

Windows. — If the teacher's desk is on the north side of the schoolroom, and the entrance doors for the pupils are on the south side, the pupils can be easily arranged so as to face the north as they are seated at their desks. There should be no windows in the room opening towards the north, as they would allow the light to fall directly on the eyes of the pupils. Light from windows at the right side or at the back of the pupil will be obstructed, — in the first case by his hands and arms when used in ciphering, drawing, or writing; and in the second case by the intervention of the whole body between the direct light and the pupil's books. In so far as the pupils are concerned, light from the left and the back does not harm the eye, and that from the left will fall properly on their work.

The windows of a schoolroom should open directly upon the outer air, and the light passing through them should not be obstructed by projections of any kind on the outside of the building.

The bottom of the windows should be about four feet from the floor, while the top should reach as near to the ceiling as possible. A transom window should be placed over each door. The amount of light admitted may be regulated by the use of inside blinds. The amount of window surface must be equal to three hundred and fifty square inches of glass for each pupil,

or about one-eighth of the floor space. The walls of the rooms may well be colored a neutral gray for the comfort of the eyes, while the ceiling should be left a pure white for the better reflection of the light.

Desks and Seats.—Great pains should be taken that seats and desks are constructed and arranged with special reference to health and comfort. Schoolrooms should in all cases be furnished with single desks. The height of the seat should be, as nearly as possible, equal to the length of the pupil's leg, measured from the knee to the sole of the foot.

If the seat or chair is supported by an iron leg, which slides up and down in a hollow cylinder, it may be adjusted to the wants of the pupil. That the pupil may not slip forward in his seat, it should be slightly inclined backward. Authority approves of placing the front edge of the desk one inch in front of the seat, and of making the vertical distance from the top of the desk to the top of the seat equal to the length of the fore-arm of the pupil who is to occupy it, or to one-sixth the height of his body.

The following table will show with sufficient accuracy the lengths and widths of the various sizes of desks required for primary, grammar, and high schools :—

	Length.	Width.
For Primary Schools	18 inch.	12 inch.
Grammar Schools	24 inch.	16 inch.
High Schools	26 inch.	20 inch.

The pupils should have easy access to their seats. To secure this end, the spaces between the rows of desks should be from twenty inches to two feet in width.

As diseases of the spine and of the eyes are frequently caused by ill-contrived seats and desks, too much care cannot be taken in their construction and arrangement.

Platform.—The teacher's platform should extend across the end of the north side of the schoolroom, and should be at least six feet in width and eight inches in height.

Upon each end small closets may be constructed for books, and for objects and apparatus to be used as the means of teaching.

Blackboards.—It is convenient to have blackboards constructed entirely around the room, wherever spaces are left between doors and windows. They should be four feet wide, and extend to within two and a half or three feet of the floor. The blackboard back of the teacher's platform should extend much higher on the wall, so that topics relating to order or to instruction may be written to remain throughout the term if desired.

The wall on which the blackboard is to be spread should be made as firm as possible before the material is put upon it: otherwise the surface will soon be broken by the jarring it will receive.

Cabinets, Cases, etc.—Every schoolroom should be well supplied with suitable places for keeping collections of natural objects, apparatus, books of reference, and text-books which are to be used in the school for teaching and study.

Ventilation.—In the report of the Massachusetts Board of Health for 1873, is to be found the following:—

“It must be considered that one-fifth of our population are children, that these are all in the growing, formative, susceptible stage of life; and they are all not only most readily, but most permanently, affected by every influence to which they are subjected. Without doubt the instinct of childhood is for frequent, almost constant, change of position and interest during the waking hours; and any steady occupation within a restricted space may be fairly termed unnatural for children. But, since they cannot have an education without some degree of violation of the normal conditions of childhood, it becomes of the first importance to maintain a constant, jealous watch over the health of school-children, and to persevere in the attempt to harmonize school methods and influences with the healthy instincts of childhood. Confinement, vitiated air, enforced quiet, prolonged mental effort, the use of the eyes on small objects in trying arrangements, are all in some degree conditions necessary to school, but threatening danger to the health of the scholars. To reduce this to a minimum, and there maintain it, is a public duty.”

In 1873 the State Board of Health sent out among other questions the following:—

Question X.—How can our schools be modified to improve their hygienic influences? (a) As to tasks and discipline; (b) as to physical conditions.

The changes recommended in the answer to question (a) are,—

Lightening tasks	38
More discriminating teachers	37
Less routine in methods	32

Lightening discipline	25
More cheerfulness	24
Abolishing marking	16
Pursuing fewer studies	14
More variety of exercise	13

The following were given in answer to (b) : —

Better ventilation	77
More equable heating	27
Regularity in daily physical exercise	21
More frequent change and freedom of position	21
Better seats and desks	17
Shorter sessions	17
Better lighting	14
More frequent recesses	13
Fewer pupils to each teacher	10

It is a well-ascertained fact that the ventilation of our school-houses is almost universally defective. It is also true that every good system of ventilation is expensive.

In securing perfect ventilation three things must be done.

1st, A supply of fresh air must be obtained. 2d, It must be warmed before it is brought into contact with the pupils. 3d, It must be excluded from the room as soon as it has been once used.

For a complete method of accomplishing these three ends, reference may be made to the Report of Massachusetts Board of Education for 1878, Appendix A, written by D. F. Lincoln, M.D., Boston : —

“ An expensive system of ventilation cannot always be constructed for the country schoolhouses. A few hints may be given, that if observed may lead to some improvement in the ventilation of even those school-buildings that are not furnished, and are not likely to be furnished, with an elaborate ventilating apparatus. If the schoolrooms are provided with double windows, the expense for fuel will be much lessened, and they can be used as a means of direct ventilation. Cold air from without, coming in contact with a single thickness of glass, cools rapidly and to a considerable extent the air within the room. This creates a draught near the window which not only lowers the temperature of the room, but is a source of danger to those sitting within its reach. Double windows will prevent both of these results; besides, if the lower outside sash be slightly raised, and the upper inside sash be slightly lowered, a current of fresh air will pass up between the two sashes, and enter the upper part of the room, having become partially warmed on its passage. A simple method of introducing fresh air is to raise the lower sash of a single window three or four inches, and place under it a board that will fill the opening. This arrangement will admit an ascending current of fresh air from the upper part of the lower sash. If a narrow

board is fastened at the top of the upper sash, having its upper edge slightly inclined inwards, then whenever the sash is lowered a few inches a current of fresh air will pass in, striking the ceiling, and be warmed before it comes in contact with the pupils. If the schoolroom is heated by a stove, pure air should be brought in contact with its heated surface through a flue leading out of doors. The stove should be surrounded with a sheath of iron or zinc, enclosing an air-space, into the lower part of which the fresh-air flue should open. The air coming in contact with the stove would be warmed; and, rising above the sheath, would distribute itself over the room.

"The doors of the stove should open into the room, and be excluded entirely from all connection with the air-chamber. If furnaces are used, fresh air can be constantly poured into the rooms through the registers. After the pure air in a room has been once used, it should be excluded. This part of the process of ventilation is not easily accomplished. If the heating is by a stove, as described, much of the bad air of the room would be drawn out in the current which is constantly passing over the fire.

"It would be well if every schoolroom were supplied with a fireplace, as a means of excluding vitiated air, although the principal heating apparatus used may be the stove or furnace. A metallic frame should be placed before every open fire, to protect the floor and the children. The pipes or flues in rooms heated by stoves or grates should be as nearly vertical as possible, and as free as possible from sharp elbows and curves, as a sharp bend diminishes the velocity of the draught. The velocity may be regulated by use of dampers. Foul air may be expelled, also, through ventilating ducts, constructed in every room of the building, and extending from the floors to the roof.

"One opening should be made in each duct near the floor, and another near the ceiling in each room, as ventilation may be quite as necessary from the upper as from the lower part of the room. These openings may be closed at pleasure, by slides constructed for the purpose. An ascending current of air is produced in the duct, by placing at its base a coil of pipe or a radiator connected with the furnace. The cellars of schoolhouses should be ventilated with the same thoroughness and care as are exercised in purifying the schoolrooms. The flues for the introduction of fresh air into the building, or into the hot-air chambers of the stoves and furnaces, should rise on the outside of the building, several feet above the ground, and should be covered with wire netting, that neither foreign substances nor impure air, found near the ground frequently, can enter them.

"*Heating.*—There are four modes of warming schoolhouses, — by the heat from an open fire, from stoves, from hot air, and from steam furnaces. The open fire is to be preferred, in so far as pure air is concerned. Soapstone stoves serve well, if constructed with a hot-air chamber, as already described. Iron stoves may be endured, if they are large enough to warm the air of the room without being themselves over-heated. They should always be provided with a hot-air chamber and a fresh-air duct or flue. Hot-air furnaces are safer if made of wrought-iron, as in that case the noxious gases generated in the furnaces will not so readily work their way through the pores of the iron, and mingle with the air that rises into the rooms through the registers. Great care should be taken that sufficient heating power be

put into every school-building to warm it easily. If this direction is observed, the heating apparatus will last longer, and it will not be necessary to heat it to such a degree as to vitiate the air that may come in contact with its surface. The use of a sufficiently large apparatus will result in an economy of fuel. In contriving a method for warming a building it would be well to bear in mind that 'any method is vicious which merely warms the air again and again;' or which brings the air to be used in direct contact with over-heated surfaces."

The heating and ventilating apparatus of all our school-buildings should be put in under the superintendence of those who understand the philosophy of these things. When it is used it should be under the care of those who are skilful and faithful in its management.

Temperature. — The temperature of the schoolroom, according to best authorities, should be kept at about 68° F.

Sewerage. — The evils arising from defective sewerage and neglected privies in connection with schoolhouses are too well understood to need description in this place. It will be necessary simply to give a few hints in regard to their construction and management. There should be two privies for each mixed school. If they are located outside of the school-building, place them in the rear part of the grounds and widely separated from each other. Let the approaches to these buildings be concealed from each other, and from the public street as much as possible, and so constructed as to prevent exposure to mud or to storm. The buildings should be thoroughly made, and so contrived that no unpleasant sight or disagreeable odor shall disturb the senses. It is important that they should be kept scrupulously clean and free from all marks of abuse.

If water-closets are constructed in the school-building, they should not be placed directly under any schoolroom or room constantly used for school purposes. It would be better to place them in projections made for the purpose, so that they may be easily and thoroughly ventilated by openings leading at once to the fresh air. Let the tanks for the closets always contain a good supply of water, and let an abundance of water be used in keeping the soil-pipes and drains clear of all solid matter. The pipes should be thoroughly trapped, that ample protection may be afforded against the mischief generated in cesspools and sewers.

It is the duty of the school committees of the Commonwealth to protect the children from the perils arising from imperfectly

ordered schoolhouses and from neglected school-grounds. Old school-buildings should be examined and put in good order, and made wholesome, before the children or their teachers are required to occupy them for a day; for it will avail little to train the intellect into a state fitted for the service of an active life, and at the same time expose the body to disease and death.

Whenever new buildings are to be erected, the builders should begin their work by choosing suitable school-grounds, and by planning the construction of the houses that are to stand upon them, with special reference to comfort, convenience, health, and beauty. In furnishing the buildings, and in arranging the grounds, it should not be forgotten that the presence of beauty in either nature or art produces happy influences on the minds of children, and has a tendency to lead them to have a high regard for beauty in moral actions.

COURSE OF STUDIES.

A course of studies is a collection of subjects arranged in the order in which they should be pursued. A complete course is one that includes all subjects necessary to be taught as occasions for all required knowledge and mental discipline.

As there are kinds of knowledge to be obtained, and kinds of discipline to be produced, a course of studies may be divided into groups or grades. The number of distinct grades of studies will determine the number of grades of schools a school system will contain. In our system we have three grades. The first is called the primary grade, and is distinguished from the other two by confining itself to subjects relating to the qualities of objects and to language. The second grade, called the intermediate, directs the attention of the learner to an analysis of the objects of his study, for those characteristics which furnish the basis of classification. The third is the scientific grade, and directs the student to a study for causes, for principles, and for a knowledge of classes.

The right selection and arrangement of studies in the different grades are of the highest importance, as they determine the kind and amount of knowledge and culture the pupil is to acquire.

The principles to be observed in making a course of studies are: 1st, Select such subjects as will furnish occasions for useful knowledge. 2d, Select the subjects best adapted to excite

that activity which will produce the best mental training. 3d, Make such an arrangement of the subjects as will allow the pupil to acquire the different grades of knowledge in the order of their dependence. 4th, Make such an arrangement as will occasion that activity only which is natural for the powers to exert.

This following is a simple outline of the topics arranged in a course by the Plymouth County School Committee Association.

This course may not be considered a model for close imitation, but it may serve to aid those who are laboring to do what has never yet been done,—to construct a perfect course of studies for the public schools.

GENERAL OUTLINE.

Grades.

	Reading.	Spelling.	Writing.	Language.	Numbers.	Drawing.	Singing.	Objects, qualities, parts, for names, with Reading.	
1									
2	"	"	"	"	"	"	"	Form, color, size, weight.	
3	"	"	"	"	"	"	"	Form, color, size, weight, place, direction.	Animals, plants, minerals.
4	"	"	"	"	Arithmetic	"	"	El. Geography. Form, color.	"
5	"	"	"	"	"	"	"	"	"
6	"	"	"	"	"	"	"	El. Hist. U.S.	"
7	"	"	"	"	"	"	"	History U. S.	"
8	"	"	"	"	"	"	"	Geography.	Definition and Division of Forms. Physiology, El. Physics. Hygiene.
9	"	"	"	"	Menuration, Book-keeping.	"	"	Civil government, town, state, nation.	" Elementary Chemistry.

The course thus sketched is for nine years. In addition to the topics named in the course, the teacher is to provide for physical and moral training.

Physical Training.—It should be the constant endeavor of the teacher to influence his pupils to perform such physical acts as will occasion health, strength, and an easy, graceful carriage of their bodies; such as will lead to the formation of good habits in taking food, exercise, sleep, and recreation; in sitting, standing, and walking; in breathing, and in the use of the vocal organs; and in protecting the body against the unfavorable effects of the weather. Attention should be given to the conditions of the schoolroom, with reference to light, temperature, ventilation, and the physical comfort of the pupils. Gymnastic exercises should be given for physical training.

Morals and Manners.—The right training of the moral nature is the most important of the teacher's duties. He should teach his pupil what *ought* to be done in the various relations of life. He should train him to *do* what ought to be done, and that it should be done with a good spirit, until right habits of acting are formed. The young should be trained to habits of obedience to human and divine authority, of truthfulness, honesty, industry, order, cleanliness, and neatness; to the observance of the Golden Rule; to behave well in the school, on the playground, on the street, and in all places where the duties of life may call them. The teacher may give effective object-lessons in morals by his own good example.

Order of Teaching.—The order to be followed in teaching every subject is: 1. To present the object of thought to the mind of the pupil. 2. To direct his mind in the acquisition of knowledge, and in the exertion of its power. 3. To lead the pupil to use good English words and constructions in expressing the ideas and thoughts he acquires.

For a more complete plan of studies and mode of teaching, see Report of Board of Education, 1879–80.

Means of Teaching.

Color.—Standard primary colors, palette, chart of colors, cards, worsteds, colored balls.

Form.—Box of forms, clay for modelling, natural objects.

Size.—Solids of various sizes, surfaces of various sizes, rods of various lengths.

Measured Size. — A foot-rule, yard-stick, Gunter's chain.

For Practice in judging of Size. — Rods of various lengths, surfaces of one kind but of various sizes, solids of various sizes.

Weight. — A system of weights, and a balance.

The teacher should provide himself with the units of all the measures belonging to both the English and French systems of weights and measures.

Numbers. — Numeral frame, oblong blocks, bundles of small rods, marbles, etc.

Elementary Geography. — Large terrestrial globe, small globe made of wood and covered with slate-surface, moulding-board, maps, a compass, and materials for constructing maps.

Botany, Mineralogy, and Zoölogy. — In the study of natural objects, there should be, first, an examination of the objects themselves for facts. In the scientific study of these objects, a knowledge of the facts is to be generalized, and classes formed. The means, then, of teaching natural objects must always be the objects themselves.

For Elementary Knowledge, and for Classes. — The objects needed for the means of teaching will be suggested by the teacher's plan of study. See Report for 1879-80.

Physics.

Matter. — Extension, impenetrability.

Means for teaching Extension. — A rod, a thin board, and a thick book, for the three dimensions.

Impenetrability. — A hard stone, a nail and a hammer, a pop-gun, a bottle for water, a tunnel, and some tissue-paper, for illustrating that no two solid or gaseous or liquid bodies can occupy the same place at the same time. As the means of testing the truth of what has been illustrated, use a piece of pine board, some cloth, and a needle. Show by these that a nail entering the wood, and a needle the cloth, push aside the atoms, but they do not penetrate them.

By means equally simple, all elementary topics in physics may be illustrated. Teachers, aided by their pupils, will find it possible to prepare for themselves all necessary means to be used in teaching and in study of both elementary physics and chemistry.

The first step to be taken in preparing to teach objectively elementary knowledge in either of the above-named branches,

is to make a proper selection of topics, and arrange them in the order of their dependence. The nature of the topics will suggest to the skilful teacher what means he must provide for illustration. After providing the means, the next step is to choose a method of teaching. The method is the same as that employed in all right objective teaching,—the teacher presents the phenomena to the pupil by means of an experiment; the pupil observes what is presented, and describes the facts he learns. In this way the elementary pupil may obtain a real knowledge of such facts as will enable him when he comes into the high school to enter upon the study of physics considered as a science.

Chemistry.

Chemistry is to be pursued by the same method as that suggested for the study of physics. Some of the simple means needed for illustrating the topics which the subject presents are,—a half-dozen five-inch test-tubes, three eight-inch test-tubes, corks, a half-dozen pieces of narrow glass tubing, a dozen tobacco-pipes, three or four glass fruit-jars, two pint bowls, two tumblers, three tinned iron teaspoons, a three-cornered file, a round file, a lamp, two small glass funnels, three small porcelain dishes, one two-quart galvanic cell, and chemicals.

Text-Books.—The pupils should be supplied with an abundance of good books of reference, to be used not as the original sources of knowledge, but to aid and guide in the study of what the teacher has before taught.

Method of Teaching.—The definition of teaching given in the Report of Board, 1879–80, seems to be a sound one, and is as follows: Teaching is that act which consists in presenting objects and subjects to the mind so as to occasion knowledge, mental training, and a good method of thinking and acting. If we can determine what are the principles of teaching, we may learn from them the true method of the art.

A principle is that upon which any thing depends.

Principles of Teaching.—The ability to teach depends upon (1) the ability to bring into the presence of the learner whatever is to be made the object of thought; (2) to teach elementary before scientific knowledge; (3) to teach the whole before its parts; (4) to teach the parts of objects in their natural order; the parts of subjects, in their logical order; (5) to direct the pupil in his work, without attempting to do the work for him.

The method arising from the practical application of these principles is the oral objective method. To apply this method so as to produce the best results requires a professional training. The normal schools of the Commonwealth offer opportunities for such training.

REQUISITES OF A GOOD TEACHER.

To teach well requires a sound body, a cultivated mind, an extensive knowledge of things, some acquaintance with the laws that control the faculties in their efforts after truth and strength, special training, a successful experience, and unlimited enthusiasm.

The first and the last of these requisites of a good teacher are, for the most part, the gifts of nature; the others are acquisitions. But whether they are the direct gifts of God, or the products of human labor, they are all necessary to the highest and best results.

The body is supposed to be the instrument that the mind uses in performing all those acts which terminate on external things, or on any kind of things that may hold objective relations. If there is such a thing as an external world existing independent of ideas, and if our physical bodies are the media through which our minds are brought in contact with it, then it would seem to follow, that the validity of our knowledge of the qualities of matter will depend somewhat upon the soundness of our bodies.

If the eyes are blind, then the mind cannot see. If the ears are stopped, the mind cannot hear. Or, if the senses of sight and hearing are unsound, then the mind will be in danger of seeing when no object of sight is present, and of hearing when there is no sound. If the *elements* of our knowledge are unreliable, the knowledge itself will have nothing real corresponding to it. Unless our simple ideas correspond to their objects, a knowledge of truth is impossible; besides, there is no right activity, except that which results, or has a tendency to result, in the discovery of the truth.

As the mind is affected by its own acts, if a poor body prevents it from reaching out and taking hold of things as they really exist, then such mental acts will be occasioned as will warp and weaken the mind, and render it unfit for reliable service. It is a great mistake to suppose that all exertion of active

power strengthens the mind. Unless the *conditions* of activity are complete, the more the mind attempts to do, the more confused will it become.

Again, our rational emotions owe their origin and their character primarily to our intellectual acts; but as our intellects are disturbed by physical weakness, so, indirectly, are our sensibilities seriously affected by the unnatural conditions of our bodies. We can never tell whether we have occasion to feel pleasure or pain, why we are melancholy or cheerful, whether there is cause for hope or despair, until we have examined our physical organism to see how the organs are performing their functions. The body is a physical thing, and the mind is spiritual, and we cannot tell through what mysterious medium the two produce their effects, each on the other; but we do know that in this world neither can live without the other: we know also that good physical health is essential to all true activity and to all harmonious development of the powers.

The teacher, then, should strive for a sound body with as much fidelity as for sound learning and good methods. In the pursuit of this important end he should receive aid and co-operation from all those who hold authority over him, as well as from those who are subject to his control. The amount of service required of him should have some well-defined and rational limit. His vacations and resting days should be appointed with reference to the fact that school-teaching is the most exhausting labor known to the race; that rest is for the renewal of those vital forces which the mind uses in the exertion of its power, and that ample physical rest is as necessary to mental life as it is to the life of the body.

The conditions of work, productive work, are strength, courage, and an abundance of good material to work with and upon. The ability to rest depends upon the existence of leisure, cheerfulness, and an aversion to the exertion of active power. But courage and cheerfulness, two essential conditions of rational effective work and successful rest, are yet impossible to the teacher, if he is made the subject of ignorant or unsympathetic criticism. We were made to work together for common ends. Discord is as unnatural as disease. Individuals acting alone are weak, but when combined into harmonious communities they become strong, and can do any thing which human effort is adapted to accomplish.

What I have said of the relations of good physical health to mental health, and to all reliable mental activity, of the relations of cheerfulness and courage to physical health, and of the relations of a sympathetic co-operation to cheerfulness and courage, is neither new nor beyond the experience of every successful teacher, and every superintendent of schools. But the importance of these things is not always observed; and there follows, as an inevitable consequence, a waste of strength, and a loss of that joy which is an inseparable companion of healthful labor.

Good health is a *condition* for successful teaching, while knowledge and objects of knowledge are the *means*. If we turn our attention to the ends every intelligent teacher aims to secure, we shall learn what he must know to secure them.

He must know, among other things, for what purpose his school is organized, and his pupils taken from their homes, both by the laws of the state and by the free will of parents, and placed for a time under the parental as well as the educational care of a school-teacher. If it is that they may acquire useful knowledge, then the teacher must know what *is* useful knowledge, and by what processes it is best acquired. If it is such a training of the powers as will enable the children, when they come to be members of society, to perform justly the duties of social life, then he must know in what such training consists, and to what processes the mind must be subjected that it may be produced. If the child is to be treated in his school-work as though he were an end unto himself, then the teacher must lead him to perform such acts in study, in recitation, in play, and in obeying school-rules, as will train him into the possession of a good individual character.

As the teacher is to do all these things, viz., teach useful knowledge and train the children into good citizens, and good persons, he must understand the philosophy of teaching, and be master of the branches of learning which utility and human development require to be taught. The philosophy of teaching that one accepts will determine his practice. If he has no well-understood philosophy, then he will have no orderly or consistent method. If his principles are false his methods will be unnatural, and false also. No teacher ever taught well who believed that simple ideas of things can be awakened in the mind for the first time by words, or that definitions and rules

should be committed to memory by elementary pupils before they are able to understand their meaning, or that a science can be taught to one before he has observed the facts of the science; or that the mind can acquire power without exercise; or that the acquisition of practical knowledge is the only acquisition that has any practical value. A teacher increases rapidly in value from the time he begins to study his work with reference to its results on the minds and characters of his pupils. He becomes a philosopher as soon as he begins to inquire into the nature of his pupils, and to study for the principles out of which he is to form his theories and his practice. From that time he will not voluntarily introduce into his school a topic of study without knowing the relations it holds to the ends of school life. He will no longer attempt to teach a branch of knowledge he does not himself understand. He will not continue to violate the laws of the human mind by the use of a wrong method of teaching or of school government.

But, however useful knowledge may be, it is not to be sought as an end in itself. Simply to know something, is not enough for beings who are so constituted that activity is life, and conscious activity is conscious life.

The great struggle of life is for power; and the one condition, Hamilton says, under which all our powers are developed is exercise. A repetition of an act adds to our faculties a facility in their use. This fact we know: the philosophy of it we cannot understand. We never perform our acts in the best manner until we have tried to perform them many times.

The value of skill appears in all forms of labor; but nowhere is it more imperatively demanded, or productive of more important results, than in that labor which has for its object the communication of knowledge, and the cultivation of human character.

The teacher, then, must add to his physical strength, and to his knowledge, a *special training* for his work. This he can obtain in two ways. One is by a long experience produced by teaching under self-direction; the other is by study and practice under one who is already a master. Both methods have produced good teachers; but the latter is to be chosen rather than the former, for we cannot afford to have our teachers groping their way toward skill with the chances against them of ever finding it.

In preparing to teach, study and practice should be combined. The study should have for its object the branches of learning to be taught in the schools, together with the principles of teaching ; the practice should consist in a thorough application of the principles.

The application should be made in a well-organized school, if possible, where the pupil teacher will be permitted to *do* what he must have the power of doing in his own future school. It should be remembered that the art of teaching is acquired by the act of teaching, and that no one should attempt to practise the art by his own strength until he has had a successful experience under the direction of skilled supervision. The training a teacher needs is that which will enable him to control himself. This means a command of all his faculties, such as will make him a reliable thinker on all the subjects he is called to present to his pupils, and able to express his thoughts with facility and by the use of well-authorized terms. It means such an education of the conscience and the taste as will enable him to detect and choose what is right in actions and beautiful in things ; such as will lead him to have a proper regard for justice, for personal appearance, for manners, and for all those elements of conduct that constitute good behavior.

Strong emotions are the signs of a strong intellect, and they are necessary to the existence of a vigorous and persistent will ; but, when they become masters, rational acts are impossible. Many teachers, with an abundance of good qualities, have failed for want of control over their own emotional natures. Some are impulsive in making their intellectual and moral judgments, and in this way lose the respect of their pupils. Some are morbidly conscientious, and worry their pupils into despair by their exactions. Others are affected by prejudices, and a disposition to criticise rather than approve.

It is within the province of special training, to fortify the mind against falling into mistakes which occur often with those who have the best intentions, and who labor the most earnestly for the highest success. If a teacher is trained to discover how much a loss of sleep, poor health, or a cloudy day has to do with his emotions, and with his judgments of the moral qualities of his pupils, he will compel himself to wait until his sleep is made up, his digestion has improved, and the bright sun has broken through the clouds, before he will attempt to inflict

merited punishment on what appears to be stupidity and malice; and then, when his own physical and mental machinery comes into good working order again, how glad he will be that his power of self-control has saved him from doing irreparable injustice to the best and brightest pupils to be found in all the schools! It is because the teacher is to stamp something of his own mental and moral image on the minds of his pupils, that he must be a model worthy of their imitation.

To say nothing of knowledge and methods of teaching, no teacher with a well-trained intellect, a good heart, and a strong will, can fail of success. But the highest success, however, requires that he add to health, to knowledge, and to training, an irresistible enthusiasm: not that mere animal feeling which expresses itself in bluster, without regard to any rational cause for its existence, but that deep, stirring emotion which arises from an over-mastering perception and love of the truth,—such a feeling as led Socrates to forget his sleep and his food whenever he found opportunity to teach to others the nature of virtue, the definition of temperance, or the reasons for belief in the immortality of the soul; such as led Pestalozzi to reject all thoughts of wealth and fame, and to spend his life in contriving a system of instruction that would make prosperous and happy the beggar children collected into his schools; or such as made Agassiz say that he had no time to waste in making money.

Enthusiasm communicates itself to all who happen to be in its presence. It throws a charm over the driest subjects of thought and the severest labor. It produces conviction before one knows the reasons for his belief; and it leads one to an intense exercise of his powers, from the pleasures that attend the exercise.

The results of the teacher's work are absolutely necessary to the life and progress of the race. If, then, he shall perform it with that efficiency and spirit which good health, sufficient knowledge, a proper training, and a large enthusiasm will enable him to command, he will show by the results that he has the requisites of a good teacher.

Necessity of Right Early Training.

When the child begins to live his spiritual life, his mind has no facility in the exertion of its active power, nor has it any tendency to act in any particular manner.

As soon as the mind exercises itself in thinking, feeling, and choosing, it begins to acquire a facility in performing these acts, and there will accompany the facility an inclination to continue to do what is easily done. This facility and inclination constitute habit.

We say of very young children that their mental faculties are undeveloped, meaning that they have not yet formed habits of acting. The capacity of the mind for forming habits renders mental development possible.

The one cause of development of the faculties is exercise. From this truth may be derived one of the fundamental principles of a true method of teaching. From the same truth may also be derived an idea of the importance of early training.

If the powers are developed by use, it follows that a method of teaching must be devised which will present right occasions for their proper exercise.

As the kind and degree of activity the mind exerts during the early developing period of its existence, determine its character, it must be placed in care of a skilful director from the first.

He will study to find, if possible, what ideas the mind in its early existence is adapted to form, what emotions its natural activity will produce, and what choices its natural acts of thinking and feeling will prompt it to make.

No unnatural interference by a controlling power must be allowed to defeat the ends which nature has planned for the child to secure for himself.

There is a period in every child's early life that the educator should improve in promoting the physical growth of the young being placed under his care.

At first the child is to live a physical life, and be controlled in his movements largely by the animal principle of action. At this time ideas will spring up in his mind as the material world is brought in contact with his senses. His emotions will be sympathetic rather than rational, and his acts will owe their origin to the impulses of his nature rather than to his reason. But notwithstanding all this it should not be forgotten that the infant mind will begin to take on its character as soon as it begins to move itself in producing its mental states.

For this reason the spontaneous activity of childhood should be directed, not forced, but simply directed, into those forms

which will produce some useful elementary knowledge, or at least a thirst for knowledge, and lay the sure foundation of a harmonious development of all the faculties.

We need, then, a system of training which shall precede the formal processes to which the child is usually subjected on entering the primary school. The true kindergarten seems to offer this training.

I say a true kindergarten ; for, unless kindergarten training is philosophical in its nature and methods, it will be adapted to do more harm than can be done by the application of unnatural training in any one of our present system of schools.

This is due to the fact that the infant mind yields readily to external influences, and that early impressions are everlasting.

For these reasons, care should be taken that the youthful powers are not checked in their spontaneous growth by arbitrary control, nor stimulated to premature activity by unnatural incentives, nor suffered to become warped in their character by a neglect to direct them to a proper and healthful exercise.

The young yield readily to authority, and are directed easily by example. It follows that those who are to direct youthful development towards intellectual and moral character must themselves be what they would have their pupils become.

They should be so acquainted with the laws in accordance with which the infant powers unfold themselves, that they may be able to co-operate with nature by removing all artificial obstructions, and supplying the conditions to a natural and easy development.

We are yet hardly aware in this country of how much consequence it is to the future progress of the child, that he be permitted from the first to grow up in the presence of wise and good instructors.

If the children from their earliest years are the objects of right influences, and are led to the natural exercise of their faculties, we have a right to expect that they will become fitted for a happy and successful life.

When the child enters the primary school, he will be put to reading, spelling, constructing words into simple sentences and his sentences into simple discourse. He will combine numbers, practise singing and drawing, and have presented to him a systematic course of lessons on the qualities of objects. He will be made subject to such rules of conduct as have for their

object the right activity of the intellect, sensibility, and will, —such activity as should ultimately lead to the power of complete self-control.

For this work, the child, if possible, should have a previous preparation.

Without violence to his youthful nature, he may be so directed in those exercises that have amusement for their end, as to enter, at about seven years of age, the primary school free from bad habits, and with his powers trained to self-activity, and his mind stored with a rich collection of facts. He will then be ready for rapid progress in those studies which the primary schools are designed to teach.

If all our children could pass from a well-conducted kindergarten into their courses of study, I am sure it would at once appear that a foundation had been laid for rapid and successful progress.

It is known by those who have made the kindergarten system of instruction an intelligent study, and have had experience in the results produced, that children trained under its influences are more readily controlled, that they are superior in intelligence to children who enter the elementary schools without previous training, that they observe with more accuracy, that they have a more eager thirst for knowledge, and that they have a much better command of language.

If this is true, then the period of elementary instruction, as now established, might be shortened, without subtracting from the good results now secured.

It would be well if the spirit of the kindergarten could be carried into the public schools.

All objects of study, or adequate representatives of the objects, should be brought into the presence of the children for their observation, and they should be permitted to obtain a knowledge of them by an exertion of their own active power. Here, too, as in the kindergarten, the teacher should do nothing but direct.

He should establish the conditions of study, and then leave the pupil to work out for himself his own knowledge and his own discipline.

In some modern schools, the ancient custom of assigning lessons from books to be studied, and committed to memory by the children, has been partially abandoned; but in the place of

it a new custom has been introduced, which in too many cases consists simply of lectures and explanations by the teacher.

The new method is no better than the old; for both alike make language the original source of our ideas, and they alike appeal exclusively to the passive powers.

Our elementary schools may learn also from the kindergarten exercises, that there is an order of development of the powers to be observed, and a logical relation of ideas to be provided for, in all grades of instruction.

This order and this relation are not much regarded by elementary instructors; and there results from the neglect an unsystematized plan of work that has no definite meaning, or certain results.

A thorough knowledge of the philosophy of education is needed, to reduce our plans of instruction to unity.

TEACHERS' INSTITUTES.

The first teachers' institutes ever held in the Commonwealth were organized by the Board of Education in 1845. They were conducted after the manner of a public school. The members were formed into classes; were required to prepare and recite lessons, and to submit to the routine and discipline to which their own pupils would be subjected.

At this time the institutes continued for a week or ten days, a small sum being appropriated to pay the board of those teachers who attended during the full period of time for which an institute was held.

For the last few years the institutes have diminished in length and increased in number. The burden of entertaining a large number of persons for a long time, and the loss caused by closing the schools for this time, were felt to be so great, that economy demanded a change in the length of time for which the institutes should be held.

They are now continued for two or three days only; the day sessions being devoted to illustrative lessons on the best method of teaching the branches which the statutes require the public schools to teach, and the evening hours to lectures designed to awaken a deeper interest on the part of the people in popular education.

The plan formerly pursued of inviting attendance, through notices sent out from the office of the secretary of the Board of

Education to an indefinite number of towns, generally resulted in collecting too small or too large a number of teachers. To prevent either of these results, the school committee of the town where an institute was to be held extended invitations to neighboring towns, inviting only so many as could be conveniently entertained. This plan has secured a more uniform attendance, and it has enlisted the sympathies of the committees and citizens of the towns, by putting the institutes, in so far as entertainment is concerned, under their control, and by making them somewhat responsible for the results of all the exercises. This plan has often enabled the smallest towns to extend courtesies to their more populous and wealthy neighbors: it has tended to promote mutual respect, and to facilitate the interchange of opinions upon educational methods.

The length of time during which the institutes are held does not essentially affect the amount of labor required to organize them. In any case the town in which the meetings are to be held, and the towns to be invited, must be twice visited; programmes are to be made; instructors are to be selected, and their parts assigned; illustrative apparatus is to be transported; means for taking notes are to be distributed to the members, and the members are to be organized into classes for school-work. All these things are to be done for every institute before the work of the sessions can commence.

At the evening meetings an opportunity was offered for a free discussion by the people, as well as by the committees and teachers, of any educational topic having either a general or a local interest. After a half-hour of such work, a formal address was given by some educator selected for the occasion, on some topic connected with public instruction.

The day work consisted of teaching-exercises given for the purpose of illustrating the philosophy of teaching, and the true method to be employed in teaching the various branches of learning required to be taught in the public schools. A good method of organizing and controlling a school was also taught, and the members of the institute were exhorted to employ it or some other rational method of their own contriving.

Lectures.

Rev. A. D. Mayo delivered a lecture at eight of the institutes on the topic, "How does Education pay?" Col. T. W. Higgin-

son gave an address at four, subject, "How to teach History;" Mr. Frank A. Hill at one, subject, "The Mound Builders;" Rev. W. H. Eaton at one, subject, "The Country Schools;" Professor W. H. Niles gave twelve lectures on "Holland and its People," and six on the "Origin of Mountain Scenery;" Mr. E. A. Hubbard spoke at three institutes on "The School Laws of the State;" and Mr. Dickinson at seven, on "The Duties of the Towns to the Public Schools."

The lectures were of an interesting and instructive character, and were appreciated by the large audiences that listened to them.

Instructors.

J. G. SCOTT, *Principal of Normal School, Westfield.* Botany, Physics, and Grammar.

CHARLES M. CARTER, *Teacher in Normal Art School, Boston.* Industrial Drawing.

C. GOODWIN CLARK, *Principal Gaston School, Boston.* Geography.

HOSEA E. HOLT, *Teacher of Vocal Music, Boston.* Vocal Music.

GEORGE H. MARTIN, *Teacher in Normal School, Bridgewater.* Botany, Mineralogy, History.

ISAAC J. OSBUN, *Teacher in Normal School, Salem.* Physics, Chemistry.

WILLIAM H. NILES, *Professor in Institute of Technology, Boston.* Geography and Natural History.

ROBERT C. METCALF, *Principal of Wells School, Boston.* Geography.

ELI A. HUBBARD, *Agent of the Board of Education.* Arithmetic and School Management.

GEORGE A. WALTON, *Agent of the Board of Education.* Arithmetic, Reading, Penmanship.

J. W. DICKINSON, *Secretary of the Board of Education.* Language, and Principles of Teaching.

Towns in which Institutes were held, and Number of Members in Attendance.

TOWNS.	NUMBER IN ATTENDANCE.
Brimfield	50
North Adams	78
Hubbardston	70
Northfield	74
Spencer	80
Pepperell	150
Plymouth	80
Merrimac	120
Brewster	70
Provincetown	67
Tyringham	55
Wilbraham	90

TOWNS.	NUMBER IN ATTENDANCE.
Williamsburg	75
Shelburne Falls	105
Foxborough	109
Fairhaven	196
Winchester	162
Saugus	224
Whitinsville	124
Rockland	158
Clinton	30
<hr/> Twenty-one.	<hr/> 2,167

The institutes were held in eleven counties, in

Berkshire	2
Franklin	2
Hampshire	1
Hampden	2
Worcester	4
Middlesex	2
Essex	2
Norfolk	1
Plymouth	2
Bristol	1
Barnstable	2

The number of towns represented was 131.

The number of school officers and citizens present was much larger than in other years.

Special Report of Institutes.

The first institute of the year was held at Brimfield. The towns invited were Holland, Wales, and Sturbridge. Instruction was given in geography, arithmetic, penmanship, reading, and language. The students of the high school, and a large number of the citizens, were present at the meetings. The institute was invited by the school committee of Brimfield, through the chairman, J. L. Woods, who rendered efficient service in securing a large attendance and in suggesting the order of exercises.

A. D. Miner, superintendent of schools in North Adams, made all arrangements for the institute held at that place, inviting the towns as far south as Pittsfield, and as far east as Greenfield. The exercises of the day and evening were of great interest to the large number present.

The Hubbardston institute was the third ever held in the town. The people of the town, as well as members of the institute, were greatly interested in the lessons taught. The hospitalities of the people were cordially and generously extended to members. The chairman of the school committee of Hubbardston gave his time and strength in aiding the instructors in conducting their exercises.

The convention held at Northfield, like those previously held in this pleasant town, awakened a good degree of public interest. The programme of exercises was essentially the same as that followed at Hubbardston. The institute was invited by the school committee of the town through its chairman, the Rev. J. L. Marsh, who expressed an active interest in its success by his presence at all its sessions, and by extending the hospitalities of the citizens to all its members.

The institute at Spencer was opened on the evening of the 19th of September, a day long to be remembered by the nation from its association with the death of President Garfield. This event cast a deep gloom over the exercises of the institute, and, had the instructors or the members followed the impulses of the hour, the meeting would have been at once postponed; but, assembled as we were in the interest of the children, we felt that we could not the better honor the memory of the teacher President, than by laboring with all earnestness in promoting a cause he loved so much,—that of popular education. Twelve day exercises and three evening lectures were given at this institute. The success of the exercises was due in no small degree to the Rev. A. S. Walker and to George L. Faxon, Esq., who manifested great interest in the entertainment of all in attendance.

The institute at Pepperell continued for two days. Twenty towns were invited by the committee of arrangements, nearly all of which responded to the invitation. Three of the towns were beyond the boundary of the State. Besides many citizens, and many friends of education from other towns, there were present a hundred and fifty members. The meetings were held in the town-hall, where the citizens spread bountiful collations for their guests; Mr. Lamb, principal of the high school, superintending, efficiently assisted by his pupils. The secretary of the school committee, Mr. L. P. Blood, was untiring in his devotion to the interests of the institute from its beginning to its close.

At Plymouth eight towns were invited, all of which were represented. As no institute had been held in this town for thirty years, a proposition from the Board of Education to hold one was promptly accepted by the school committee, who furnished every facility for conducting its work. The exercises of the day and evening were largely attended by the citizens. Thanks were offered to superintendent Charles Burton for the courteous manner in which he extended the hospitalities of the historic town to all in attendance.

The next institute in order was held at Merrimac by invitation of the school committee. The attendance of members was a hundred and twenty. Some of the towns near Merrimac did not send their teachers. One, as was afterwards ascertained, voted, through its school committee, to allow all teachers to close their schools, who were willing to deduct pay for the time they were closed.

The exercises of this institute were listened to with earnest and critical attention. The citizens of Merrimac were greatly interested in all the proceedings. Dr. H. J. Cushing, chairman of the school committee, by his intelligent and earnest efforts contributed largely to the success secured. The exercises were the same in kind as those already enumerated.

The institutes at Brewster and Provincetown, Barnstable County, were both attended by enthusiastic teachers, and by thoroughly interested school-committee men and citizens. A cordial and generous reception was given to all in attendance. The efforts of the school committees of both these towns were put forth to the utmost to secure successful meetings. Especial mention should be made of labors performed by Mr. Tully Crosby, chairman of the committee of Brewster, and by Dr. Henry Shortle, superintendent of the schools of Provincetown. At the close of the institute at Provincetown the following resolution offered by Dr. Newton was unanimously adopted:—

Resolved, That we heartily approve the method of instruction presented by the officers of the Massachusetts Board of Education and their assistants before the institute at Provincetown, believing it to be far in advance of former methods.

The eleventh institute of the series was held at Tyringham, Berkshire County. The school committee of the town, Messrs. Sweet, Slater, and Howland, spent the whole time during

which the institute continued, in providing for its wants. Free entertainment and free conveyance were furnished to all members. Tyringham is a quiet farming town lying in a beautiful valley, about five miles from any railroad communication. All the members of the institute came by carriage, some of them a distance of twelve miles. There were in attendance ten school-committee men and fifty-five teachers.

The institutes held at Wilbraham, Williamsburg, Shelburne Falls, and Foxborough, were each of two days' duration, and were conducted after a manner similar to others already described. The towns invited closed their schools, and sent in their teachers. The school committees came with the teachers, and with them entered earnestly into the study of the topics taught, and into the discussions of the subject presented. The people of towns in which the institutes were held all manifested the same good spirit in extending hospitalities to the members. The exercises in all cases had a direct bearing on the everyday work of the public-school teacher, and of the supervisor of the schools.

At Fairhaven the sessions of the institute were held in the audience-room of the Methodist church. The room was crowded with earnest learners during all the day and evening exercises. Many of the pupils of the high and grammar schools were constant attendants, copying topics, and making notes on the lessons taught. This act on the part of the young pupils was a most gratifying evidence of the excellent instruction imparted in the schools of Fairhaven. Rev. Henry Harrington, the distinguished superintendent of the public schools of New Bedford, was present with members of the school committee and nearly all the teachers of that city. It was the universal expression of those present, that the institute was an interesting and profitable one to all its members, as well to those who were skilled in the art of teaching as to those who were without experience. Very efficient service was rendered at this meeting by the secretary of school committee of Fairhaven, Mrs. Lucy M. Davis; by Mr. G. H. Tripp, principal of the high school; and by Mrs. L. H. Robertson, principal of the grammar school.

The following resolutions, offered by Rev. G. E. Fuller, were adopted by a unanimous vote at the close of the institute:—

Resolved, That we, the citizens of Fairhaven and vicinity, desire gratefully to acknowledge our indebtedness to the managers of the teachers' institute for the rich, profitable, and interesting exercises we have had the pleasure of attending and listening to for the past two days.

Resolved, That we shall ever hold in high appreciation the entertaining and instructive lectures by Professor William H. Niles on "Holland and its People," and by Mr. Frank A. Hill on "The Mound Builders."

The institute at Winchester was the first ever held in the town, and was somewhat peculiar in its plan of organization. The secretary of the school committee of Winchester, in extending invitations to the towns, had also requested a return of the names of their teachers. The list secured was furnished to the conductors of the institute, who, for their own records and for the convenience of the committee of arrangements, called the roll at the commencement of each session. In this way it was known that every teacher of the one hundred and sixty-five invited was present, with three exceptions,—three being absent on account of sickness. The hospitalities of the town were generously expressed by the very bountiful collations furnished for the noon and evening meals of the two days during which the institute continued. To Mrs. R. C. Metcalf and her young lady assistants is to be given the credit of arranging the collations with great skill and good taste.

At the closing session the following resolution was offered by Alfred S. Hall, Esq., and unanimously adopted by the convention:—

Resolved, That the sincere thanks of the committees, teachers, and citizens who have attended these exercises, are extended to the Board of Education for providing us an institute of such excellence; that to each of the lecturers and instructors of the institute we give our thanks for their learned and valuable counsel and addresses. They have interested and entertained us, and have left us lessons which will be remembered with profit and delight.

The largest institute of the year was held at Saugus. The number of teachers and school officers present was two hundred and twenty-four. All the teachers invited, with two exceptions, were in attendance: two were detained by sickness. The character of the institute, the enthusiasm of the teachers, and the marked hospitality of the citizens, all resembled closely what was experienced at Winchester. Mrs. M. P. Sweetser, secretary of the school committee, was the efficient agent in providing for the institute a most bountiful entertainment.

At the close of the sessions a resolution was offered by Superintendent O. B. Bruce, commending the towns for closing their schools, the teachers for their prompt attendance, the instructors for their valuable instruction, and the people of Saugus for their hospitality. The resolution was passed by a unanimous vote.

An institute of one day was held in each of the following towns: Whitinsville, Rockland, and Clinton.

The convention at Whitinsville was called by the Worcester South School Committee Association, which embraces the school officers of the valley of the Blackstone River south of Worcester. The programme of exercises was prepared by the association, and the officers of the Board of Education were invited to aid in carrying it out. After the lessons were taught they were thoroughly discussed by the members of the institute. The plan of the meeting had its origin with Superintendent Dr. R. R. Clarke of Whitinsville, a zealous and self-sacrificing friend of the schools and of popular education. He was aided in organizing the meeting by all the members of the School Committee Association. More of the elements that affect the schools were here brought into fortunate conjunction than at any other institute held during the year.

The institute at Rockland was honored with the presence of his Excellency Gov. Long; Hon. Henry B. Peirce, Secretary of State; J. A. McLellan, Inspector of High and Normal Schools in the Province of Ontario; and Dr. Larkin Dunton, Principal of the Normal School, Boston.

They all expressed their approval of the exercises, and their pleasure in observing the interest manifested in them by the members of the institute. The citizens of Rockland expressed their good-will towards the cause of popular education by providing abundantly for the physical wants of the teachers present.

At the close of the meeting, resolutions were passed expressing a full appreciation of the value of the exercises presented, and of the hospitality of the people of Rockland.

The Clinton meeting was strictly a town institute. An invitation was extended by the school committee, through its secretary, Col. Edward G. Stevens, to the secretary and agents of the Board, to visit the public schools of the several grades, and to conduct, in a somewhat familiar way, exercises illustrative of

the method of teaching the common-school branches and of managing the schools. Nine primary schools, the grammar and the high school were visited in the forenoon, and the institute work was taken up in the afternoon. This consisted in part of criticising quietly what had been observed, and in part of explaining good methods of teaching, and training the young.

It is believed that the institutes held in the Commonwealth last autumn have been productive of great good. The exercises given in them were carefully prepared, the instructors were carefully chosen, the members were prompt in their attendance, and earnest in securing to themselves what was taught. The school committees were cordial in their co-operation, and the citizens in the towns where the institutes were held were most hospitable in their entertainments.

One of the encouraging circumstances connected with the institutes just held is found in the fact, that the people, into whose hands the schools are committed, seem everywhere ready to co-operate with the agents of the State Board of Education in awakening a deeper interest in popular education. While the school committees and the teachers of the State have earnestly availed themselves of all the advantages which the institutes have offered to them, the people have contributed to their success, by manifesting an appreciation of their value, and by providing the means for their support.

WOMEN AS MEMBERS OF SCHOOL COMMITTEES.

By an act approved June 30, 1874, it was made legal for women to serve as members of school committees. Women had served in that capacity before the act was passed; but there had always been some doubt concerning the legality of their serving. From the returns made to the Board of Education in 1881, it appeared that ninety-eight women were serving upon school boards in seventy-two towns of the Commonwealth. Experience has proved that the women who are likely to be elected to that office make most efficient school officers.

In many cases the women have more leisure than the men, or they are more ready to work for a small material compensation. Oftentimes they are fresher from the schools, either as scholars or teachers, and feel a deeper interest in the education of children.

The number of persons employed as teachers in the public

schools, during the last year, was 8,861; of this number, 7,727 were women. As it is the policy of the Commonwealth to commit seven-eighths of its public instruction into the hands of women, it would seem consistent for it to commit a share of its supervision of the instructors into the hands of women also.

It is the uniform testimony of the agents of the Board who visit the different parts of the State, that, wherever women are found serving on school boards, there school affairs are in a progressive state.

NORMAL SCHOOLS.

The five normal schools supported by the State are reported to be in a prosperous condition. The last legislature made generous provision for new heating and ventilating apparatus at Salem, and for a new laboratory at Bridgewater. The apparatus has been put in, and the laboratory building erected. The one was much needed for comfort and health; and the other as a means for the study of physics and chemistry, and for practice preparatory to teaching these topics to others.

The demand for trained teachers is constantly increasing. As the people are obtaining more adequate and definite ideas of what it is to teach, and of the ends school exercises should attempt to secure, the more necessary does it appear to them that all teachers should have a thorough professional training for their work. Such training implies a careful study of the history and philosophy of education, an application of the knowledge obtained to the construction of a course of studies for the different grades of the public schools, a thorough knowledge of the subjects introduced into the course, and a knowledge of the method of teaching. It also implies the acquisition of that skill which enables a teacher to conduct his exercises in accordance with his philosophy.

There are some dangers connected with a professional study of methods of teaching. The normal student may be led by his teacher to pursue his study with sole reference to knowledge, leaving the acquisition of skill to future thought and practice. When, with such preparation, he comes to take up teaching as something to be done to children in a real school, he is sure to find that he has made a mistake by confining his efforts to forming mental images of unreal things.

Another danger is found in the tendency that an abstract study of methods has to create in the student's mind an inclination to bestow too much attention upon formalities. Both these dangers may be avoided by teaching and learning the fundamental truths upon which correct teaching is founded, and by a practical use of the truths under the training of a skilful master. A successful practice of teaching steadies the mind of the professional student in forming his theories. Experience has proved that the normal schools produce more satisfactory results when they teach the philosophy and the practice of teaching in connection with each other.

Training-schools seem, then, to be a necessary adjunct of the normal schools. It should be the constant aim of our professional schools to furnish their pupils with opportunities for obtaining experience as well as knowledge.

The number attending and the number graduating from the five State normal schools are as follows:—

	Number of Students.	Number of Students.
Bridgewater	174	52
Framingham	112	33
Salem	263	58
Westfield	120	25
Worcester	167	16*

Number of normal teachers employed in the Commonwealth, 2,236.

JOURNAL OF EDUCATION.

In these times of intense interest in all that pertains to the education of the young, teachers should avail themselves of every means of obtaining information, as well as knowledge.

The experiences of one individual may be communicated to another in such a manner as to prevent much of the loss caused by misdirected effort. Events that have had a bearing on the progress of the race are constantly repeating themselves as periods of time pass away. What has happened in educational affairs is no exception to the rule. Theories and practices which have been tried and condemned re-appear to be tried over

* Only one class.

again, and again to be rejected. No one is prepared to be a leader, or an intelligent follower even, in methods of teaching, who has not given thoughtful attention to the history of education. Nor can he expect to keep pace with the progress of the present age, unless, at the same time he is active in the discovery of new truth for himself, he is equally active in keeping himself informed of the new truths discovered by other minds.

To this end, the teachers of the Commonwealth, of all grades of schools, should be familiar with the best current educational literature.

The international magazine called "Education," "The New England Journal of Education," and "The Primary Teacher," all published under the direction of Dr. Thomas W. Bicknell of Boston, are some of the educational periodicals that should be read by every educator in the State. It would be a high compliment to pay to the profession in this Commonwealth, to say of its members, that they were all constant and interested readers of these valuable educational papers.

AGENTS OF THE BOARD.

Mr. George A. Walton and Mr. E. A. Hubbard, agents of the Board of Education, have done good service the past year, for the towns, in visiting the schools, and in conducting teachers' institutes. Mr. Walton made, during the summer, a thorough examination of a portion of the schools in Bristol County, and Mr. Hubbard did the same for Franklin County. A plan for the examination was drawn up, which called the attention of the agents to every thing affecting the character and condition of the schools. The mode of conducting the examination, and the results of it, may be found described in the Appendix of this Report. The first step towards a reform in school-work, or towards approving what already exists, is to examine for the facts. The agents, being practical teachers, are well fitted to conduct such an examination of the schools as will bring to light what is true of them.

As we come near to the internal life of our schools, through a competent examination, we find that while some of them appear well, others are far from satisfactory. The small towns are quite liable to make the great mistake of practising a wasteful economy in supporting their schools. They do not seem to bear in mind that a poor teacher, at any price, must, from the

nature of the case, be more expensive than a good one; that a short school may, in the end, cost the town more than a long one; that irregular attendance of the pupils for the sake of the products of their labor at home will occasion more want than it will relieve; and that a failure to provide an intelligent and thorough supervision of the schools will result in a failure to secure the ends for which schools are established.

The results of the examinations already made of the schools of Norfolk, Bristol, and Franklin Counties, show an imperative demand for an addition to our school forces, which shall have for its province a systematic and constant direction of all school affairs.

The agents of the Board have aided in conducting, during the year, twenty-one institutes; they have answered constant calls to visit the towns for the purpose of aiding the school committee in their work of supervision, and the teachers in their work of instruction. There is a demand for more agents. Until the towns are organized so as to supply themselves with special school directors, the State should supply them, that the best and largest results which our system of schools is capable of producing may be secured.

DISTRICT SUPERVISION.

Sects. 44 and 45 of chap. 44 of the Public Laws give authority to any two or more towns to form a district, for the purpose of employing a superintendent of public schools therein, who shall perform in each town, the duties prescribed by law. Two districts have been organized under these provisions of the statutes; Waltham and Watertown forming one, and Canton and Milton the other. The first-named district is under the superintendency of Mr. John F. Prince; the second, of Mr. G. I. Aldrich. These union superintendents are doing a grand work for their districts, and are solving the problems relating to district supervision. If all the smaller towns of the Commonwealth could be united into convenient districts, and in this way supplied with adequate school superintendence, experience is proving that the conditions of good schools would be supplied.

The educational institutions of a State should be organized with reference to two ends: 1. The perfection of the indi-

vidual; 2. A preparation of the individual to perform skilfully his duties as a citizen of the community in which he is to live. The first is called general, the second technical, education. As the State exists for the protection and development of the people, it is clearly within its province to organize a system of schools with reference to the accomplishment of both these ends. As a fact the school system of this Commonwealth has reference to general education only, as an immediate end; although it assumes that whatever matures the man will lay the foundation for that skill which fits him for his special place in life. The State should first provide schools for general and symmetrical culture. Into these schools all the children of the State should be sent until they have been trained together long enough to have cultivated in them that common intelligence and spirit which will enable them to live together a harmonious social life. This end should be accomplished by the time our pupils graduate from the high school. Technical education may sometimes begin before general education is completed; but the former should never be allowed to interfere with the latter. After general education is provided for, then, for the sake of the individual, and for the well-being of the State, special schools may be established for professional and industrial training. The children should all be trained to work, as well as to think.

Their education is inadequate and incomplete unless it has cultivated in them the power of providing for their own wants. Wealth in this country is not a permanent possession. The children of the rich may be, and often are, compelled to toil for the means of living. This is a sad misfortune only to those who have no inclination or ability to work.

If a State provides every needed kind of education for all, and requires all alike to obtain a general education for the perfection of the individual as a moral and intellectual being, and some technical training to fit the individual to provide for his own temporal wants, it will do much towards delivering itself from the burdens imposed by pauperism and crime, and lay the foundations for the highest civilization.

In the appendix to this report will be found a valuable contribution by Dr. J. D. Runkle, of the School of Technology, Boston, on the manual element in education; the annual re-

ports of the agents of the Boards of Education, Mr. E. A. Hubbard and Mr. George A. Walton; the annual report of Prof. Walter Smith, State Director of Art Education; a paper by William Connell, jun., superintendent of the schools of Fall River, on a method of furnishing school supplies; and a report of the inspector of the high and normal schools of Ontario upon district supervision of schools.

JOHN W. DICKINSON.

Boston, 1882.

FINANCIAL STATEMENT.

FINANCIAL STATEMENT OF THE BOARD OF EDUCATION.

Dr	APPROPRIATION FOR SUPPORT OF NORMAL SCHOOLS.		Cr.
	1881.	1881.	
Bridgewater Normal School.			
Salary of principal . . .	\$2,600 00		\$59,900 00
Salaries of assistants . . .	10,032 00		
Care of buildings, repairs, etc. .	479 32		
Fuel	340 00		
Printing catalogue and pro-			
grammes	89 41		
Advertising	17 42		
School of observation	243 85		
	\$13,802 00		
Framingham Normal School.			
Salary of principal	\$2,100 00		
Salaries of assistants	6,879 02		
Care of buildings, repairs, etc. .	839 69		
Fuel	524 36		
Advertising	78 63		
Printing	56 52		
Books, binding, and stationery,	75 90		
Sewerage	399 30		
Sundries	21 08		
	10,974 50		
Salem Normal School.			
Salary of principal	\$3,000 00		
Salaries of assistants	9,444 97		
Care of buildings, repairs, etc. .	384 57		
Fuel	402 75		
Water-tax	49 50		
Chemicals, etc.	134 51		
	18,416 30		

FINANCIAL STATEMENT.

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Westfield Normal School.				
Salary of principal . . .	\$2,600 00			
Salaries of assistants . . .	5,887 65			
Care of buildings, repairs, etc. . .	789 95			
Fuel, gas, and water . . .	524 18			
Advertising . . .	13 00			
Printing . . .	76 80			
Apparatus and stationery . . .	39 75			
School of observation . . .	400 99			
Sundries . . .	17 65			
		10,349 97		
Worcester Normal School.				
Salary of principal . . .	\$2,600 00			
Salaries of assistants . . .	5,955 57			
Fuel . . .	575 75			
Care of buildings, repairs, etc. . .	970 24			
Books and stationery . . .	153 64			
Printing . . .	190 42			
Advertising . . .	121 55			
Diplomas, postage, etc. . .	34 00			
Water, ice, etc. . .	23 80			
Telephone, chemicals, etc. . .	48 02			
		10,672 99		
			\$59,215 76	
			684 24	
			\$59,900 00	
Balance of appropriation unexpended Jan. 1, 1882 . . .				\$59,900 00

FINANCIAL STATEMENT OF THE BOARD OF EDUCATION—CONTINUED.

Dr.	APPROPRIATION FOR NORMAL ART SCHOOL.				Cr.
1881.	Salary of principal . . .	\$2,250 00	1881.	Appropriation . . .	\$17,000 00
	Salaries of assistants . . .	8,946 52			
	Rent . . .	3,500 00			
	Janitor . . .	393 32			
	Taxes . . .	817 32			
	Printing . . .	104 15			
	Water-tax . . .	46 19			
	Fuel and heating . . .	670 25			
	Gas . . .	250 00			
	Balance unexpended . . .				
		\$16,977 75			\$17,000 00
		22 25			
		\$17,000 00			
APPROPRIATION FOR AID TO NORMAL PUPILS.					
1881.			1881.	Appropriation . . .	\$4,000 00
June 27,	Bridgewater School . . .	\$349 00			
	Framingham School . . .	127 00			
	Salem School . . .	762 00			
	Westfield School . . .	556 00			
	Worcester School . . .	206 00			
		\$2,000 00			
		2,000 00			
		\$4,000 00			\$4,000 00
Dec. 31,	Balance unexpended . . .				

APPROPRIATION FOR AGENTS OF THE BOARD.

1881.	George A. Walton, salary George A. Walton, expenses Eli A. Hubbard, salary Eli A. Hubbard, expenses	\$2,250 00 390 52 2,250 00 393 49	1881.	Appropriation	\$5,400 00
Dec. 31,	Balance unexpended.	. . .			
		\$5,285 01 115 99			\$5,400 00

APPROPRIATION FOR TEACHERS' INSTITUTES.

1881.	Institute at North Adams. " at Hubbardston. " at Northfield. " at Spencer. " at Pepperell. " at Plymouth. " at Merrimac. " at Brewster. " at Provincetown. " at Tyngham. " at Wilbraham. " at Williamsburg. " at Shelburne Falls. " at Foxborough. " at Fairhaven.	\$83 75 88 16 112 02 98 37 88 77 96 90 89 62 117 85 126 95 121 29 127 76 121 42 76 35 71 70 110 93	1881.	Appropriation	\$2,000 00
	Amount carried forward.	\$1,531 84		Amount carried forward	\$2,000 00

FINANCIAL STATEMENT OF THE BOARD OF EDUCATION — CONCLUDED.

Dr.	APPROPRIATION FOR TEACHERS' INSTITUTES — CONCLUDED.			Cr.
	1881.	1881.	Amount brought forward	
	<i>Amount brought forward</i>			\$2,000 00
	Institute at Winchester . . .	\$1,531 84		
	“ at Saugus . . .	130 08		
	“ at Whitinsville . . .	39 35		
	“ at Rockland . . .	39 75		
	“ at Clinton . . .	70 96		
	“ at Brimfield . . .	12 80		
	Printing . . .	20 00		
		66 10		
		<u>\$1,910 88</u>		
		89 12		
		<u>\$2,000 00</u>		
Dec. 31,	Balance unexpended. . .			\$2,000 00

Dr.	APPROPRIATION FOR INCIDENTAL EXPENSES OF BOARD.			Cr.
	1881.	1881.	Appropriation	
	<i>Amount brought forward</i>			\$1,200 00
	Printing school registers . . .	\$639 71		
	Postage, stamped envelopes, etc.	180 24		
	Printing . . .	114 17		
	Messenger service . . .	95 00		
	Stationery . . .	22 05		
	Copying and tabulating returns,	17 00		
	Binding . . .	11 25		
	Expressage . . .	6 95		
	Telegrams . . .	7 68		
		<u>\$1,094 05</u>		
		105 95		
		<u>\$1,200 00</u>		
Dec. 31,	Balance unexpended. . .			\$1,200 00

APPROPRIATION FOR TRAVELLING EXPENSES OF MEMBERS OF THE BOARD.

1881.			1881.	Appropriation		
Nov. 4,	Paid Charles B. Rice	\$22 80				\$400 00
8,	" H. G. Knight	16 35				
25,	" M. B. Whitney.	33 92				
30,	" William Rice	26 25				
Dec. 13,	" A. A. Miner	25 97				
28,	" E. B. Stoddard.	43 00				
			\$167 79			
31,	Balance unexpended.	.	232 21			
		.	\$400 00			\$400 00

C. B. TILLINGHAST, *Treasurer.*

APPENDIXES.

A.

THE MANUAL ELEMENT IN EDUCATION.

BY

JOHN D. RUNKLE, LL.D.

THE MANUAL ELEMENT IN EDUCATION.

THE Forty-first Annual Report of the Massachusetts Board of Education (1876-77) contains a paper with the above title ; and I gladly comply with the wish of the honorable Board that I should prepare a second paper upon the same subject, embodying such additional experience as may have been gained in our School of Mechanic Arts and other similar schools, together with any information I may have been able to gather since the date of the first paper. My chief aim in this paper will be to furnish such details as may be of service to corporations or individuals, as hints or aids in the establishment of this kind of education.

It is hardly worth while in this connection to consider the way that this element is to find its place in our educational system. Individual opinion may for a time have some influence in directing the current of thought upon this subject ; but in the end the needs of the public will control. There is already a wide-felt impression, if not conviction, that something of the kind is necessary ; and this conviction is most likely to find expression at first in special mechanic art schools, in centres where the need is most felt. If these schools shall demonstrate their value, not only as training schools for fitting students to enter upon certain lines of industrial activity, but also as schools for furnishing the needed mental discipline, then it seems reasonable to suppose that this element will become more general, and just in proportion to the value in which it is held by the educated and thinking public. The methods of teaching the manual element will become better settled through a larger experience ; and there will not be the present lack of teachers properly trained for this kind of education.

The revolution in the method of teaching the physical and

natural sciences now practically completed in the laboratory method, or the method of investigation as it may properly be called, is recognized, not only as best for the acquisition of the required knowledge, but also as best for the discipline it imparts; and in the same way the laboratory method of teaching the mechanic arts will gradually take its place as a practical, and at the same time a disciplinary, element in education.

It is but a few years since the idea of introducing drawing into our schools as an element of general education seemed visionary; and yet to-day it is an accomplished fact in many parts of our own country, and has been for a much longer time in many countries abroad. Drawing is now regarded by many educators as an established factor in elementary education, and destined to work its way into all classes of public schools. It was only after it was plainly seen that there is a wide distinction to be made between drawing as an art and the drawing which pertains to a specific industry of which the former can be considered only in the light of the most general preparation, that the art began to be regarded as a possible fundamental factor in a common education. Until recently but little attention has been given to the same broad distinction, which underlies all the manual processes. The old idea of "trade-schools" — that is, schools for teaching the technical details of specific industries — has become so fixed in the public mind that some writers on the general subject, and some reports of school committees, have advocated the introduction of trades into the public schools. To all who entertain this idea I earnestly commend a paper on "Technical Training in American Schools," by E. E. White, LL.D., president of Purdue University, Indiana, issued by the Bureau of Education in Washington; and, while I entirely agree with the conclusions of the paper referred to as regards the introduction of trades into our public schools, no matter of what grade, I am further convinced on general grounds, and from some opportunity of observing the working of trade or special industrial schools, in contrast with general mechanic art schools, in which drawing and other mechanic arts enter as a proper factor, that trade-schools can only be justified, if at all, in a few exceptional cases depending upon the character of those to be taught, and in some few instances upon the character of the industry, such as practical farming, horticulture, pomology, or any other industry in which the manual ele-

ment forms a very inconsiderable part of the special knowledge required, and does not involve those qualities of precision, consecutiveness, and quantitative relation, which would give it special educational value. To special schools of this class I shall hereafter refer. The arts are few, and the trades many. It is the province of a fundamental general education to deal with generals, leaving to the student the task of finding out how his general knowledge applies in special cases. In short, he learns the *technique* of his trade after he leaves the school, and enters upon his chosen specialty. But it is quite another thing to leave out of his general education all those elements which underlie all industrial pursuits, and particularly if it can be seen that the introduction of these general elements is not only educationally feasible, but desirable for the roundness and unity of the general education, and valuable, no matter what the future of those so educated may be.

Nor does it follow, as some suppose, that, because the manual element is introduced into a course of study in proportion to its value as an educational factor, therefore all who take the course must necessarily become mechanics, any more than it follows that, because all are taught the art of drawing, all must therefore follow some pursuit in which this art enters as a necessary element. But it does follow that these mechanic art shops or laboratories would be used just as laboratories for the teaching of other arts or sciences are used, — first, to teach the subject as a part of the general education, and, second, for the advanced study of those who wish to become specialists in this particular direction; that is, for general and professional education.

It is often asserted, and I think with truth, that American boys are disinclined, for various reasons, to enter upon industrial pursuits, and especially where a long shop apprenticeship is required. My experience is that the objection is oftener on the part of the parents, for the reason that the boy's general education must stop, and because, as a rule, it surrounds him with influences which often prove fatal at this critical period of his life. It is also sometimes thought that social considerations influence the boy as well as his parents. But as soon as school authorities, teachers, and the public generally show their respect for labor, by giving it consideration through educational preparation, no caste feeling will enter into the parents' or boy's choice

of a future career. He will simply consult his taste and aptitudes, and the opportunities that offer, when he is ready to go to work. The experience in our own School of Mechanic Arts for the past five years fully sustains this position. Special technical schools confessedly for the children of the poor would inevitably become caste schools; but a general technical training in some of the manual arts, including drawing, required of all during the proper period, occupying only a few hours per week, say from the age of twelve to sixteen, and before the student has sufficient mental maturity to work successfully in a science laboratory, would have an entirely opposite effect, and be at the same time an excellent preparation for industrial pursuits or for further study, no matter in what direction; for whatever subject cultivates care, close observation, exactness, patience, and method, must be a valuable training and preparation for all studies and pursuits. But few persons, I apprehend, whose education did not include drawing, have not had occasion to regret it, if on no higher ground than their inability to use the pencil or drawing-pen for the simplest purposes with any effect or satisfaction.

Before proceeding to an account of some schools in which the Russian method of mechanic art education is used, I will simply add that the Imperial Technical School of Moscow was the first to show that it is best to teach an art before attempting to apply it; that the mechanic arts can be taught to classes through a graded series of examples by the usual laboratory methods which are used in teaching the sciences. The ideas involved in the system are, first, to entirely separate the *art* from the *trade*,—the *instruction*-shops from the *construction*-shops; second, to teach each art in its own shop; third, to equip each shop with as many places and sets of tools, and thus accommodate as many pupils as the teacher can instruct at the same time; fourth, to design and graduate the series of samples to be worked out in each shop on educational grounds; and, fifth, to adopt the proper tests for proficiency and progress.

It is indeed true, that, after the arts have been learned, the next logical step in a full course is to teach their applications in constructions, either in private works, or as is done in the Moscow school. In such a school, where the curriculum covers six years, and the young engineer is needed in the service immediately upon graduation, and has not the opportunity, for any reason, to learn the details of construction in private works, then the attaching of the works to the school may be justified.

THE IMPERIAL TECHNICAL SCHOOL

IN MOSCOW, RUSSIA.

This school is entitled to the leading place in any list of schools giving mechanic art education, on account of the fact that it was the first to put this instruction upon a strictly scientific and educational basis, — first, by separating the laboratories, or instruction-shops, from the manufacturing establishment; and, second, by working out a systematic scheme of instruction in each of the underlying arts.

I. THE ORGANIZATION OF THE SCHOOL.

The old school of Arts and Trades was founded in 1830; and by an imperial decree dated June 1, 1868, this school was re-organized and raised to the rank of the leading polytechnic schools of Europe. The course of instruction is six years, — three of general studies, and three of higher special studies.

The work of the second three years embraces three sections of students, mechanical engineers, technological engineers, and constructing engineers. There is a fourth section, called *practiciens*, formed exclusively of those who show exceptional aptitude for practical work, but whose theoretical studies are insufficient to pass them into the engineering sections. They take much fuller shop courses, which they complete in three years.

To be admitted to the school the applicant must present presumptive evidence of qualification, by presenting one of the following certificates: —

1. A certificate of the seventh class in a gymnasium, giving classical instruction.
2. A certificate of a completed course in a real-school of the first class.
3. A certificate of a course of study taken in a school of equal rank.

Before being definitely admitted he must pass a test examination in the following subjects: —

Russian Language. — Composition on a theme chosen by the professor.

Mathematics. — Arithmetic, algebra, elementary analysis, geometry, and plane trigonometry.

Physics. — A course of general physics.

Drawing. — Freehand and mechanical drawing.

Without the above-named certificates, the applicant must pass an examination embracing all the studies of a real-school of the first class.

The studies of the school combine theory and practice, followed in parallel courses. The extent of the scientific instruction is the same as in the leading polytechnic schools of Europe. The practical studies embrace freehand and mechanical drawing; the art of turning in wood and metals, joinery and pattern-making, fitting, locksmithing, forging, moulding, and casting. For the practical studies, special workshops have been established, furnished with all the pedagogical objects necessary for methodic instruction, which is given by special masters, who demonstrate to the pupils the fundamental principles of hand-work in the mechanic arts. The school possesses in addition large manufacturing works, with all the adjuncts of a first-class establishment.

These works employ salaried workmen, and execute orders annually to the amount of a hundred and fifty to two hundred thousand francs. Still the main aim of the works is to furnish students an example of the conditions of industrial work in all its practical details.

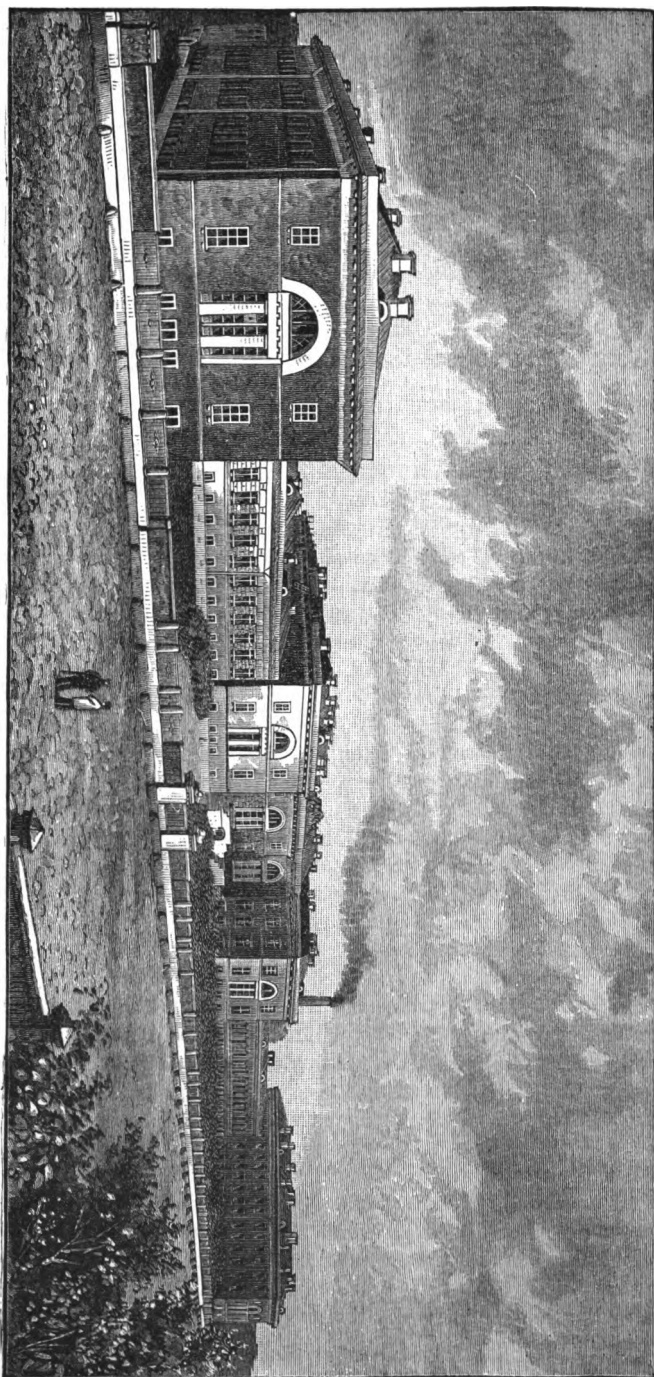
II. THE ADMINISTRATION OF THE SCHOOL, ITS EMPLOYEES AND PUPILS.

Serge Barsheff, honorary curator, privy councillor.

Victor Della-Vos, director, actual councillor of state.

The corps of instruction consists of professors, masters, repeaters, numbering	46
Engineer-in-chief, assistants and foremen	11
Various employees	15
	<hr/>
	72
Under officers and soldiers in the employ of the school	84
Workmen employed in the workshops, average number	100
	<hr/>
	184
Free boarding students	100
Boarding students, paying twelve hundred francs per year,	200
Day students paying four hundred francs per year	282
	<hr/>
	582

THE IMPERIAL TECHNICAL SCHOOL, MOSCOW, RUSSIA.



The pedagogical council consists of the following :—

BARSCHEFF, <i>Honorary Curator.</i>	KOSSOFF.
DELLA-VOS, <i>President.</i>	PORSHESSINSKY.
BASHENOFF, <i>Secretary.</i>	TOUKOVSKY.
KAZAOUROFF.	KOLLEY.
LETNIKOFF.	PETROFF.
ARKIPOFF.	WINOGRADOFF.
ORLOFF.	WLADIMIRSKY.
AESCHLIMANN.	ZELOFF.
LEBEDEFF.	RUNKLE.¹

III. THE METHOD OF INSTRUCTION IN THE MECHANIC ARTS.

The following statement is extracted from the account given by Director Della-Vos, of the exhibit of the Moscow school at Philadelphia in 1876, and again substantially the same at the Paris Exposition in 1878 :—

“ In 1868 the school council considered it indispensable, in order to secure the systematical teaching of elementary practical work, as well as for the more convenient supervision of the pupils while practically employed, to separate entirely the school workshops from the mechanical works in which the orders from private individuals are executed, admitting pupils to the latter only when they have perfectly acquired the principles of practical labor.

“ By the separation alone of the school workshops from the mechanical works, the principal aim was, however, far from being attained. It was found necessary to work out such a method of teaching the elementary principles of mechanical art as, firstly, should demand the least possible length of time for their acquirement; secondly, should increase the facility of the supervision of the gradationary employment of the pupils; thirdly, should impart to the study itself of practical work the character of a sound, systematical acquirement of knowledge; and fourthly, and lastly, as should facilitate the demonstration of the progress of every pupil at every stated time. Everybody is well aware that the successful study of any art whatsoever, freehand or linear drawing, music, singing, painting, etc., is only attainable when the first attempts at any of them are strictly subject to the laws of gradation and successiveness, when every student adheres to a definite method or school, surmounting, little by little and by certain degrees, the difficulties to be encountered.

“ All those arts, which we have just named possess a method of study which has been well worked out and defined, because, since they have long constituted a part of the education of the well-instructed classes of people, they could not but become subject to scientific analysis, could not but become the objects of investigation, with a view of defining those conditions which might render the study of them as easy and regulated as possible.

¹ Elected honorary member, Sept. 11, 1878.

"If we except the attempts made in France in the year 1867 by the celebrated and learned mechanical engineer, A. Cler, to form a collection of models for the practical study of the principal methods of forging and welding iron and steel, as well as the chief parts of joiners' work, and this with a purely demonstrative aim, — no one, as far as we are aware, has hitherto been actively engaged in the working-out of this question in its application to the study of hand labor in workshops. To the Imperial Technical School belongs the initiative in the introduction of a systematical method of teaching the arts of turning, carpentering, fitting, and forging.

"To the knowledge and experience in these specialties of the gentlemen intrusted with the management of the school workshops, and to their warm sympathy in the matter of practical education, we are indebted for the drawing-up of the programme of systematical instruction in the mechanical arts, its introduction in the year 1868 into the workshops, and also for the preparation of the necessary auxiliaries to study. In the year 1870, at the exhibition of manufactures at St. Petersburg, the school exhibited its methods of teaching mechanical arts, and from that time they have been introduced into all the technical schools of Russia.

"And now (1878) we present our system of instruction, not as a project, but as an accomplished fact, confirmed by the long experience of ten years of success in its results."

IV. THE SCHOOL WORKSHOPS.

(1) *Wood-Turning*. — Course I. For instruction in wood-turning, thirteen samples or models. Course II. Patterns of details and machines, thirty models.

(2) *Joinery*. — A course of twenty-five models for instruction in joinery and pattern-making.

(3) *Forging*. — Models (seventy-nine) for teaching the manipulations.

(4) *Metal-Turning*. — First course, thirty-eight samples or models. Second course, twenty-one models.

(5) *Fitting*. — Course I. Time for study, two hundred and forty hours on twenty-eight models. Course II. Time for study, two hundred and forty hours on twenty-three models. Course III. Time for study, two hundred and forty hours on twenty-four models. This shop is also fitted with benches, instruments, and apparatus for marking and lining the parts of machines to be worked.

(6) *Models for the Practical Study of the Construction of Cutting Instruments*. — I. Fourteen models of drills and countersinks increased to six times the ordinary size.

II. Eight models of the cutting parts of files increased to twenty-four times the ordinary size.

III. Ten models of screw-cutting tools increased to six times the ordinary size.

The importance of these models for teaching the theory of these tools is obvious.

It will be noticed that the course in fitting contains seventy-five models and seven hundred and twenty hours. It is found that one student cannot work the whole series in the given time, and the following system is adopted for the engineering students: Each student works one-third of the models; but he is held responsible for the remaining two-thirds by studying the work of the two who are on his right and left. When either of the three receives instruction, the other two must attend. In this way all are held responsible for the manner of working and the method of solution of each piece.

The students in the section of *praticiens*, on the other hand, must each work out the entire series.

With this account of one of the most thoroughly equipped and comprehensive schools for mechanic art and mechanical engineering education in the world, I pass to the

ROYAL MECHANIC ART SCHOOL

IN KOMOTAU, BOHEMIA.

This school opened Oct. 26, 1874, under the direction of Professor Theodore Reuter, who, after an inspection of the various methods of shop instruction in use in Europe, adopted that of the Moscow school, giving credit to Director Della-Vos. No manufacturing works are connected with the school. Its simple aim is to educate skilled mechanics in the best and quickest way, and with such theoretical knowledge as the mechanic needs in addition to manual skill. The front portion of the school-building, only half of which is shown in the cut, is used for the theoretical instruction, and the three portions extending at right angles in the rear contain the shops. These were at first equipped for forty-eight students; but additional facilities have been furnished from time to time to meet the increasing number of students. The minimum age for admission is fourteen years; but all ages up to twenty-six years are found in the school. The course is two years, and the student is occupied nine hours per day, — from eight to twelve M. in the

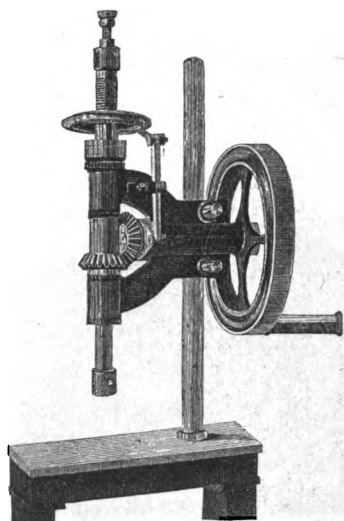
study and drawing rooms, and from one to six P.M. in the shops. The shop-work holds the first consideration, as the quality of this work is the test by which the public is to determine the value of the practical instruction. The theoretical subjects and the methods of teaching them are determined solely by the student's needs as a skilled mechanic. The following is the course of study:—

First Year's Course of Shop-Work.—1. Carpentry and joinery, thirty hours per week for sixteen weeks. 2. Wood-turning, thirty hours per week for twelve weeks. 3. Hand-tool work in metals, thirty hours per week for twelve weeks. In this course the typical forms in locksmithery are used as models, preparatory to a course in application during the second year. The student changes his shop-work every four weeks.

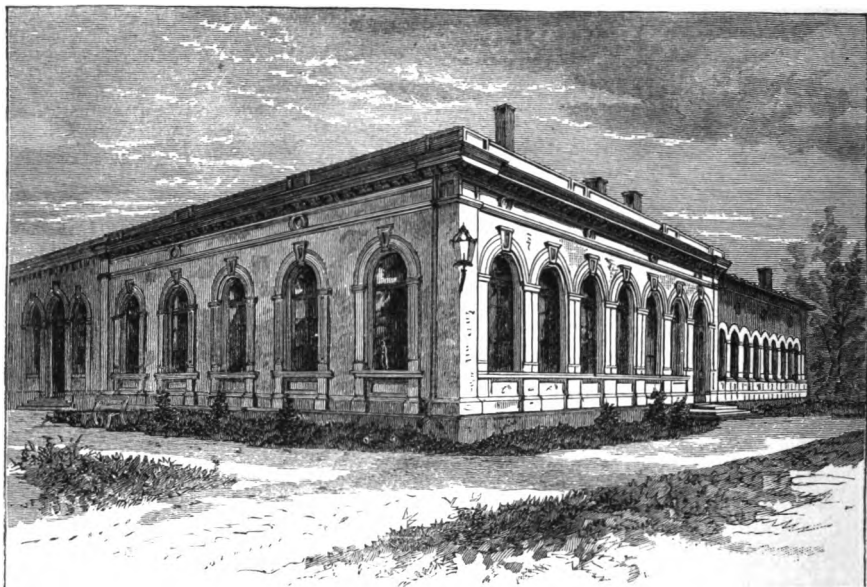
First Year's Course of Theoretical Studies.—1. Linear drawing and the elements of projections, ten hours per week. 2. Freehand drawing, four hours per week. 3. Round-hand writing, one hour per week, winter term. 4. Arithmetic, five hours per week in winter, and two hours in summer. 5. Geometry, three hours per week in summer. 6. Physics, one hour per week. 7. Machine theory, two hours per week. 8. Simple book-keeping and business-papers. In all of these subjects only the simplest elements are taught in a plain and thorough way.

Second Year's Course of Shop-Work.—1. Forging, thirty hours per week for eight weeks, two hundred and forty hours. 2. Foundry-work, thirty hours per week for eight weeks. 3. Iron-turning, thirty hours per week for twelve weeks. 4. Locksmithery, an applied course of thirty hours per week of twelve weeks.

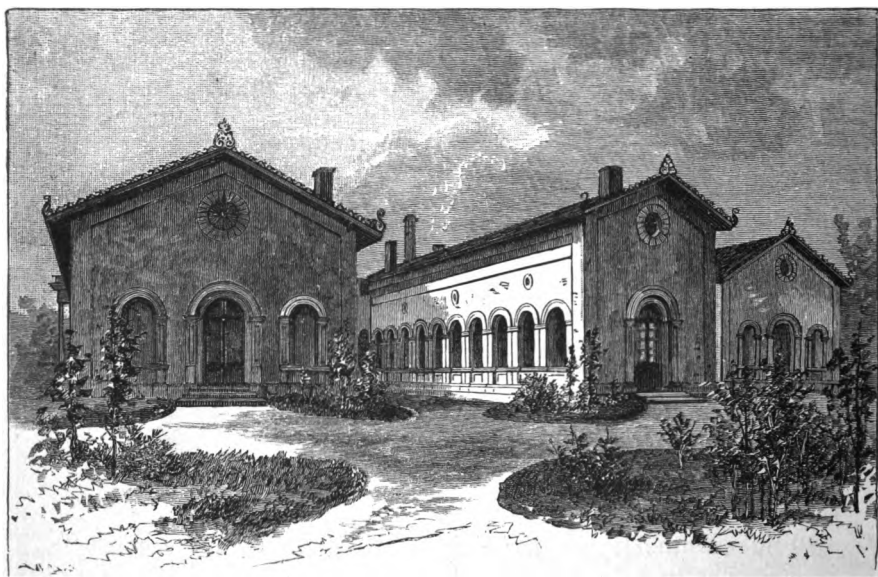
Besides the prescribed work in this course, each industrious student can make one or more complete machines. This little drilling-machine is not given as a fair specimen, but because I happened to have a photograph of it. In this extra work he



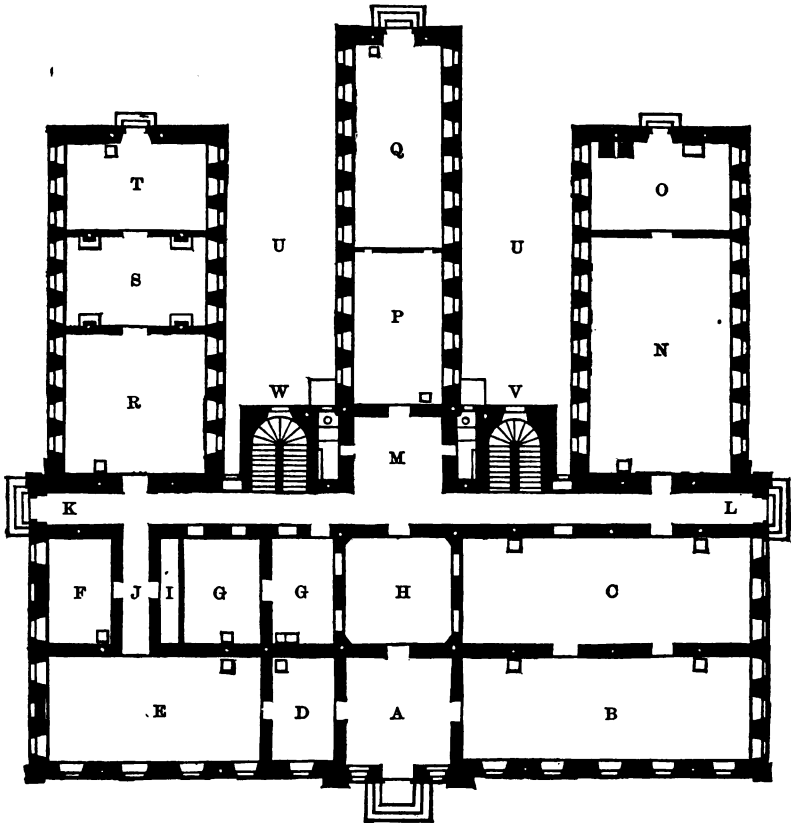
DRILLING-MACHINE.



KOMOTAU SCHOOL-BUILDING. — FRONT.



KOMOTAU SCHOOL-BUILDING. — REAR.



Scale 1:400 (5 mm = 2 M).

PLAN OF THE KOMOTAU SCHOOL-BUILDING.

- | | |
|------------------------------------|--------------------------------------|
| A. Entrance Hall. | M. Corridor Hall; Glass Roof. |
| B. Drawing-Room. | N. Model Joinery and Pattern-Making. |
| C. Model-Room. | O. Iron Foundry. |
| D. Director's Room. | P. Model Wood-Turning. |
| E. Lecture-Room. | Q. Iron-Turning. |
| F. Conference and Recitation Room. | R. Machine Locksmithery. |
| G G. Janitor's Quarters. | S. Forging Shop. |
| H. Engine-Room; Glass Roof. | T. Model Locksmithery. |
| I. Store-Room. | U U. Paved Courts. |
| J K L. Corridors. | V. Coal Magazine. |
| K. Students' Entrance. | W. Iron Magazine. |
| L. Students' Exit. | |

For this Plan I am indebted to Director Röver.

has only the direction, suggestions, and advice of his teachers, in order to cultivate as early as possible his independence in design and execution.

Second Year's Course of Theoretical Studies.—1. Machine-drawing, ten hours per week. 2. Freehand drawing, four hours per week. 3. Arithmetic, two hours per week. 4. Stereotomy, one hour per week. 5. Applications of arithmetic and geometry to simple machine computations, three hours per week. 6. The manipulation and manufacture of metals, one hour per week. 7. Machine theory, two hours per week. 8. Book-keeping and business-papers.

In all the shops the instruction is given through a progressive series of models, all of which each student must work; nor can he take a new one till the previous one is satisfactorily made. Any student who, through greater industry or capacity, finishes the course in advance of the class, can choose his work, with the sanction of his teacher, till the course is completed; but he cannot enter a new shop in advance of his class.

As all the materials are furnished by the school, it claims all the work. Each student has a case, with his name attached, in which his work is placed. All pieces of marked excellence are put into the collection for general and annual exhibitions in the name of the student. All the work is kept for two years, and then sold to schools and individuals for the purposes of instruction. There is a small but growing class of men abroad called *Technikers*. They do not claim to be, or rank with, engineers, but are simply skilled and well-educated mechanics; and these men are finding situations as teachers in such schools as that at Komotau. They are qualified to give instruction in both the theoretical and practical departments, and are likely to be much better teachers of shop-work than the mechanic who has only his shop experience. While there is not an excess of such men abroad, here they are difficult to find.

This school was established two years before our Mechanic Art School at the Institute of Technology, but I did not know of it till near the close of our first year. The fact that both schools had independently adopted the same method of shop instruction, drawn from the same source, made my two days' visit in Komotau of peculiar interest. At the time of my visit the school was in charge of Professor Röver, from whom I received the kindest attention, Professor Reuter having been

called to Iserlohn in Prussia, to found another school. Through the director of the Komotau school I had the pleasure of meeting Professor Hauff of the Polytechnic School of Vienna, who is the chairman of a commission having in charge the matter of intermediate industrial education in Austria. It is proposed to establish special schools in all industrial centres throughout the empire, having precisely the same aims as that at Komotau, and conducted upon the same principles and by the same methods, but varied and adapted to the industry of the particular locality, the theoretical studies conforming to the needs of the particular industry. I was informed that the aim and end of these schools is to be instruction, and only when the manufacture of certain things can be taught in an applied course more successfully than ideal or purely educational models, will it be done; the principle having already been settled that these schools were in no sense to become or to be regarded as commercial manufacturing establishments. The department of commerce has also established a practical technical school at Steyr, with workshops to teach all the processes in the working of iron and steel,—such as forging, turning, chipping, filing, boring, scraping, polishing, burnishing, soldering, tempering, annealing, gilding, silvering, nickeling, engraving, etching, coloring, staining, etc., including applications to wood, bone, horn, and ivory. In connection with the programme of the school we find the following remarks:—

“It is now beyond question, that the required education, together with the arts belonging to the several trades, can only be gained in special schools with workshops fitted up in the proper way. These workshops also make it possible for large numbers to fit themselves for the various technical trades, without having to travel the unpleasant path which leads through the years of apprenticeship, and at the same time to acquire the proper education. While the shops here relate to the manufacture of small articles in iron and steel, those at Komotau and Klagenfurt pay particular attention to the education of foremen and workmen in machine manufacturing, and those at Ferlach to gun-making.

“Just as the last-named school has proved that it is possible in a few years to revive an almost dead industry, and make workmen capable of paying taxes out of despairing mechanics, so the school at Komotau has shown the most brilliant proofs of usefulness, and the ends there gained have been acknowledged at home and abroad. One proof is, that, in spite of the hard times, all the pupils from Komotau have found occupation in different manufacturing establishments; and another, that England, a country unsurpassed in the manufactures of iron and steel, has already sent some students to the school.”

SCHOOL OF MECHANIC ARTS,
INSTITUTE OF TECHNOLOGY, BOSTON, MASS.

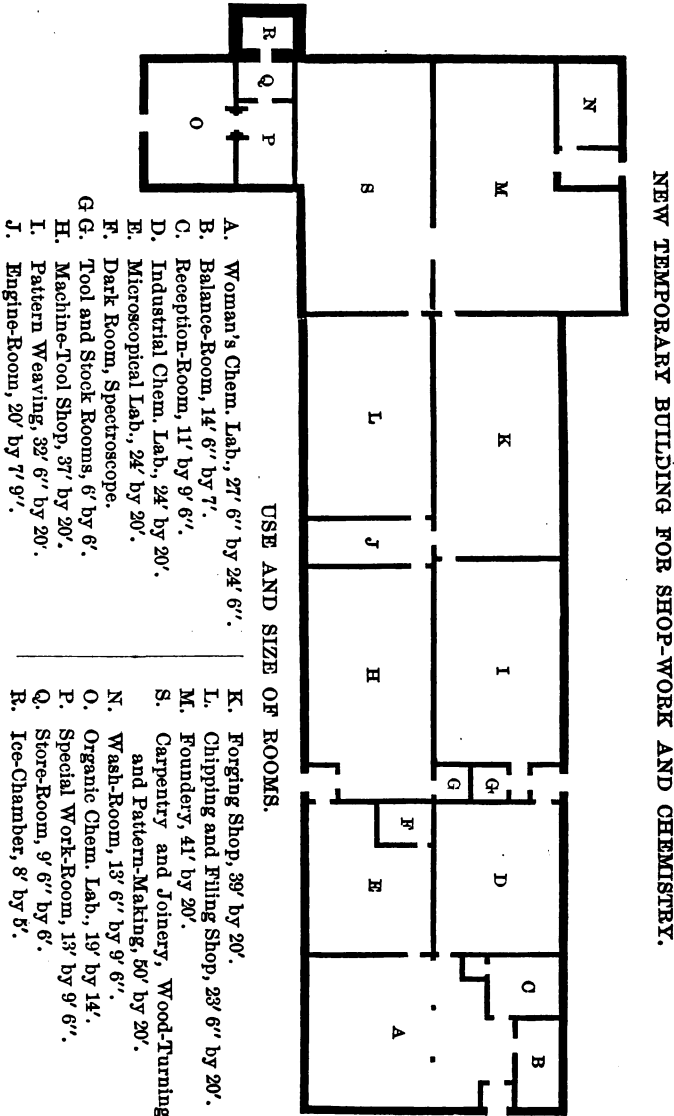
This school was founded by a vote of the corporation of the Institute, dated Aug. 17, 1876. Since Oct. 1, 1878, it has been in charge of a committee of the faculty, Professor John M. Ordway, chairman, upon whom has devolved the main direction of the school. While adhering to the spirit and method of instruction, the aim has been to make the work in all departments as practical as possible, by selecting useful forms, if equally good, to teach the particular manipulation. The accompanying pages of cuts, showing series of samples used in each shop, are given as a general illustration, and not as the only, or even necessarily the best, series, for teaching the manipulations in each case. Every qualified teacher will naturally design his own course, and will also modify it from time to time as experience suggests. There is obviously the same freedom here as in the teaching of other subjects. The mechanic art courses are as follows: In *wood*—I. Carpentry and joinery; II. Wood-turning; III. Pattern-making. In *iron*—I. Vise-work; II. Forging; III. Foundry-work; IV. Machine-tool work.

While these shops are used for the practical instruction of our students in mechanical engineering, and for such other professional students of the Institute as desire it, they are most largely used by students in the school of mechanic arts. This school, in which special prominence is given to *manual* education, has been established for those who wish to enter upon industrial pursuits, rather than to become scientific engineers. It is designed to afford such students as have completed the ordinary grammar-school course an opportunity to continue the elementary scientific and literary studies, together with mechanical and freehand drawing, while receiving theoretical and practical instruction in these various arts, including the nature and economic value of the materials with which they deal. Nine hours per week—three lessons of three hours each—of the students' time are devoted to shop-work, and the balance to drawing and other studies; only one shop course, except in the case of special shop students, being carried on at a time.

It may be well, now, briefly to indicate the steps necessary to

be taken in fitting up a shop, and in working out the course of study.

The Shop.—1. Settle upon the tools and appliances to be



used during the course. 2. Decide how many students can be taught in a section. 3. Design the fitting-up of the shop, giving each student the proper space and facilities, and so arrange

that each student, in each section, can lock up and control his own tools and instruments, which are not to be used in common.

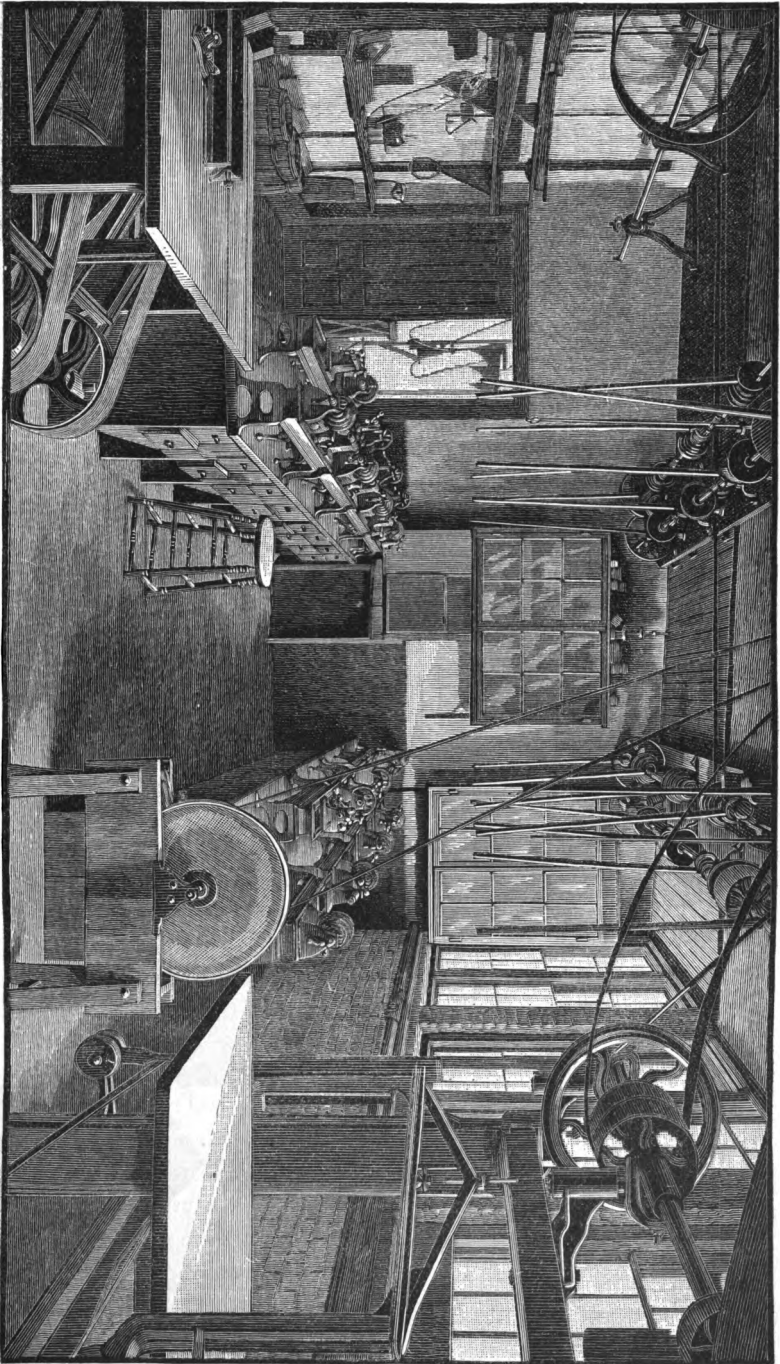
The Course of Study.—1. Design a series of progressive lessons, especially adapted to teach the use of the set of tools and appliances pertaining to each course. 2. Let the master work each lesson, or sample, that he may settle clearly in his own mind the best method of solution, with a statement of the reasons therefor. 3. A system of inspection upon which the quality of the work can be based, and each student given his proper percentage, and which shall also be the means of educating the judgment of the student, that it may keep pace with his skill of hand to execute.

We find, then, that in this practical part of the problem there are three distinct educational steps. First, the best method of solution. Second, skill of hand to execute the work. Third, the capacity to judge of the quality of the work.

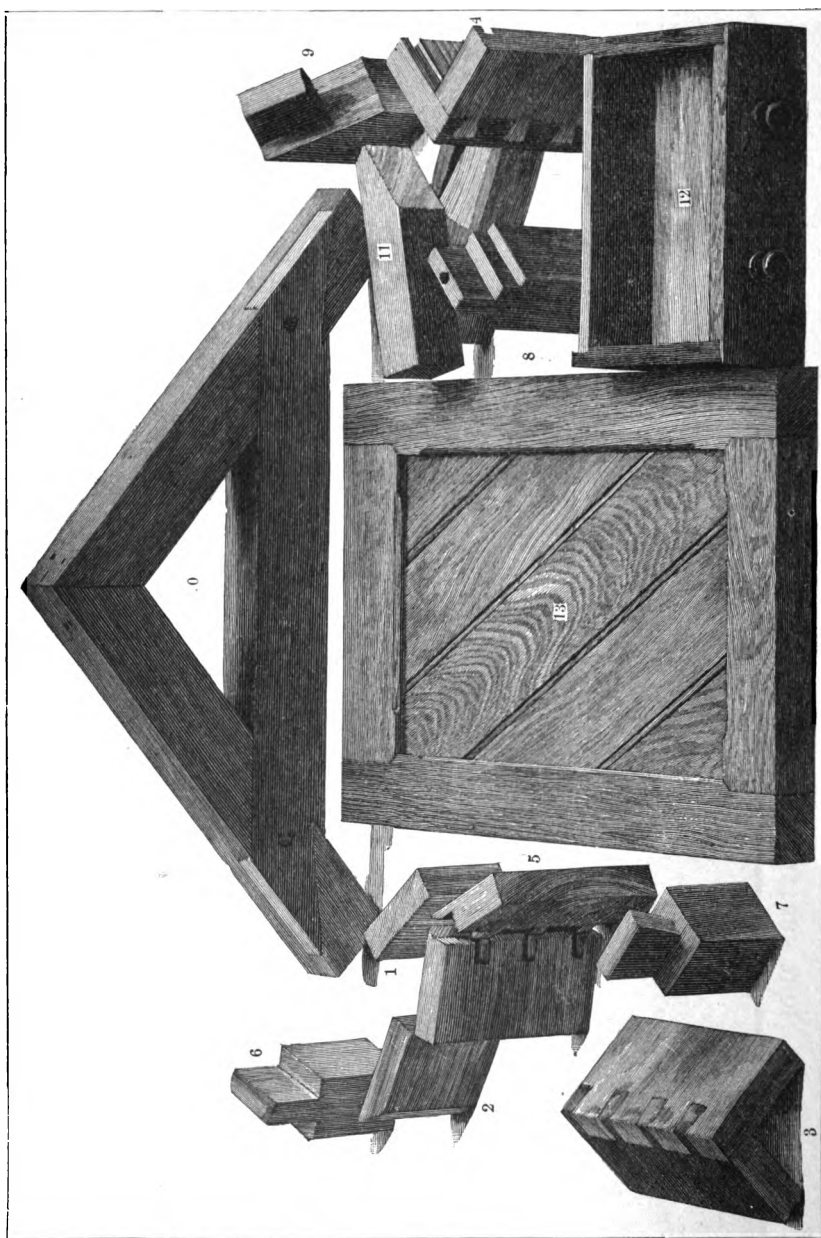
The theoretical studies are arithmetic, algebra, geometry, English, physics, and drawing. The shops are arranged for teaching sixteen in a section, except that for forging, which contains only eight forges, on account of the smallness of the room. The deficiency has been remedied as far as possible by enlarging the foundry, and using portable forges.

All our shops are entirely too small for the work we are endeavoring to do in them, and the present temporary building must soon be replaced by a larger and better adapted one, if the purposes of the school are ever fully realized.

The Carpentry, Joinery, Wood-Turning and Pattern Shop.—This shop is 50' by 20', one end containing the carpentry and joinery benches, and the other the wood-turning lathes shown in the cut. The lathes are placed four on each side of two benches, and under each lathe are four drawers to hold the tools of the four sections. The carpentry and joinery benches at the other end of the room are similarly arranged. In the middle of the room, the cut shows the saws for cutting up the lumber to the dimensions needed in the courses of instruction. The first instruction in carpentry and joinery is the use of the saw and plane in working wood to given dimensions, and then a series of elements follow in order. (See cut.) No. 1, a square joint; 2, a mitre joint; 3, a dovetail joint; 4, a blind dovetail; 5, a mitre dovetail; 6, a common tenon; 7, a key tenon; 8, a tusk

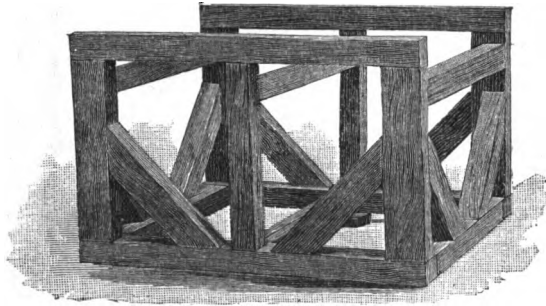


THE CARPENTRY, JOINERY, WOOD-TURNING, AND PATTERN SHOP.



COURSE IN CARPENTRY AND JOINERY.

tenon ; 9, a brace tenon ; 10, a pair of rafters with collar-beam ; 11, a truss tenon ; 12, a drawer ; 13, a panel. In addition to the above each student makes a small frame, to apply several of the elements of the previous lessons. A sample is given in the cut.



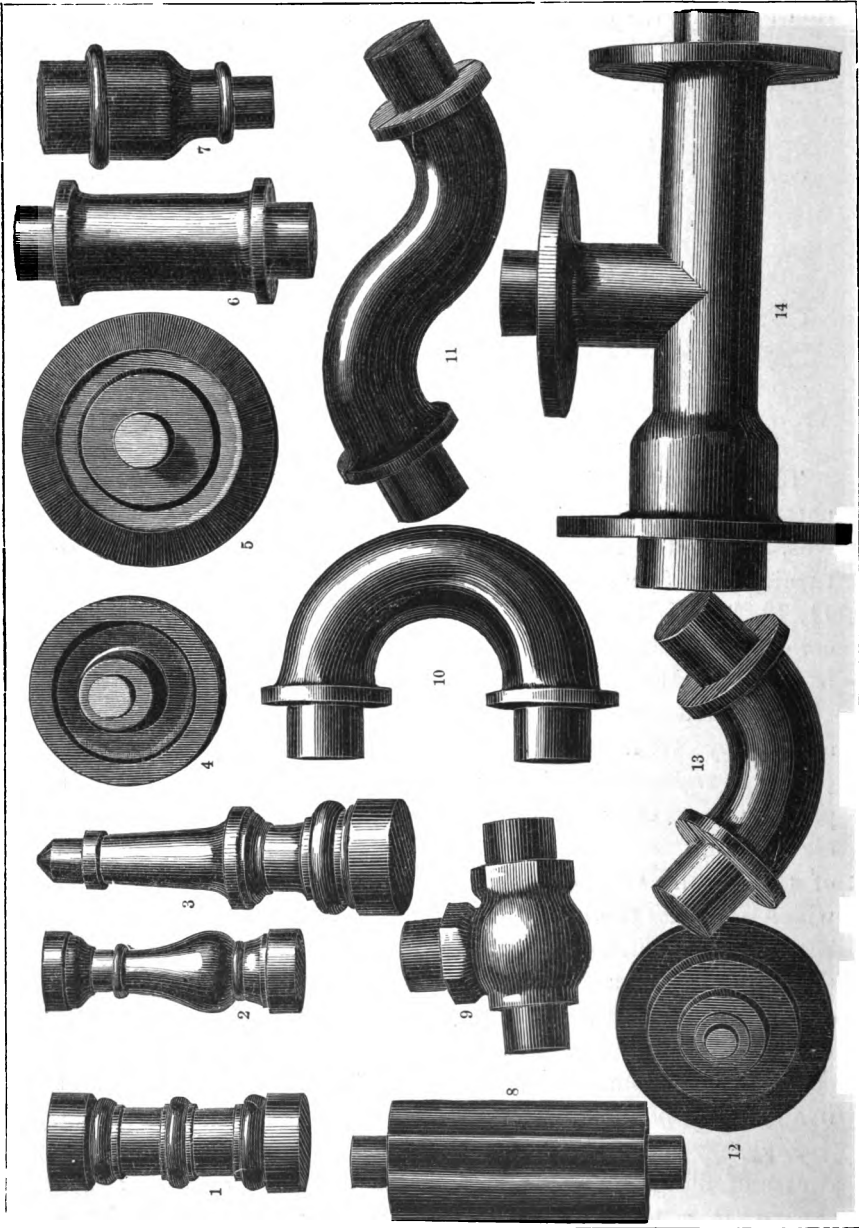
SMALL FRAME.

The instruction in turning (see cut) and circular-section pattern-making is given in the following series of models. Nos. 1, 2, and 3 represent a series of manipulations in simple turning ; 4, 5, and 12, pulleys ; 9, a globe-valve ; 6, 7, 8, 10, 11, 13, 14, patterns for various forms of pipe. Corresponding core patterns form part of the course. Bench patterns, and bench and lathe combined, are not included for want of space.

The instruction in this shop is given by Mr. George Smith, assisted by Mr. Z. Nason.

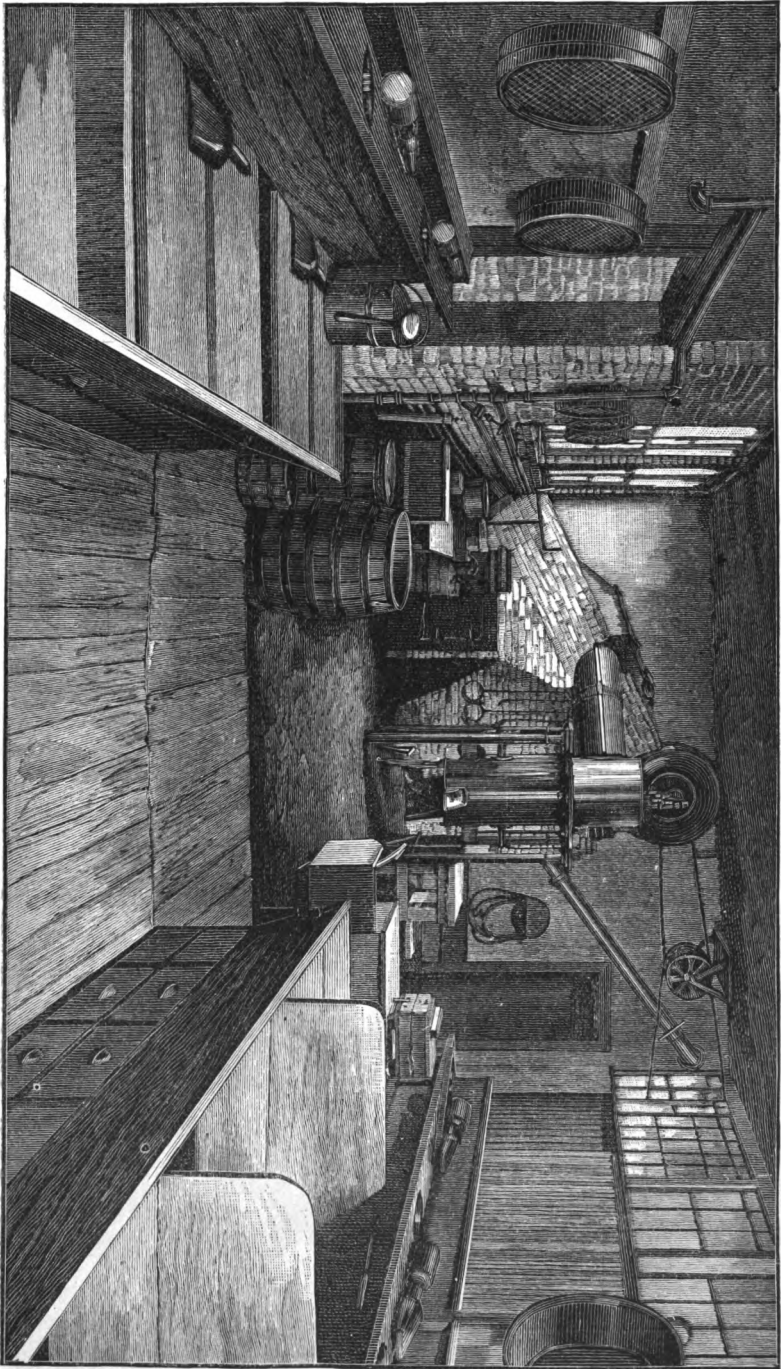
The Foundry. — The cut representing the foundry shows a part of the sixteen moulding benches, combined with troughs for holding the sand, with the cupola furnace at the other end of the room. Over the furnace is seen the Sturtevant fan, which exhausts the heat and dust from the blacksmith's shop beyond. The furnace connects with a flue which passes out of the shop, thence underground, into a chimney in the rear end of the main Institute building. The blast for the furnace is taken from the pipe shown over the door, in the rear right-hand corner of the room. An average charge of the furnace is about five hundred pounds.

Foundry Course. — Nos. 1, 2, 3, 4, 5, are pieces used in the course of filing and chipping ; 6 and 7, curved castings ; 8, a sheave ; 9, a pulley ; 10, a pulley ; 11, an eccentric ; 12, a clutch ; 13, 14, 15, 16, 17, 18, 21, parts of a loom ; 19, 20, cog-wheels ; 22, a rack ; 23, a shield.



COURSE IN WOOD-TURNING AND PATTERN-MAKING.

THE FOUNDERY.





COURSE IN FOUNDRY-WORK.

The Forging Shop. — This shop is fitted with eight forges. The Sturtevant pressure blower, which furnishes the blast for the forges, is placed in the engine-room. The hoods over the forges are connected with a sixteen-inch pipe, which runs longitudinally near the ceiling of the shop, and enters a No. 4 Sturtevant exhaust blower in the foundry. This exhaust blower removes all smoke and dust, and much of the heat. This shop was planned and fitted by Mr. B. F. Sturtevant of Boston at his own expense. The school is also indebted to him for other valuable assistance.

The Machine-Tool Shop. — This shop contains sixteen engine lathes of $4\frac{1}{2}$ bed, four speed lathes, and a Brainard milling machine. The engine lathes were made for the school by the Putnam Machine Company of Fitchburg, Mass., from new designs, and furnished at a greatly reduced cost, and have proved in all respects first-class tools. Under each lathe is a chest of drawers to hold the tools belonging to the students using it. A bench under the window holds the requisite number of vises. The shop needs a variety of additional tools, which are not furnished for want of room.

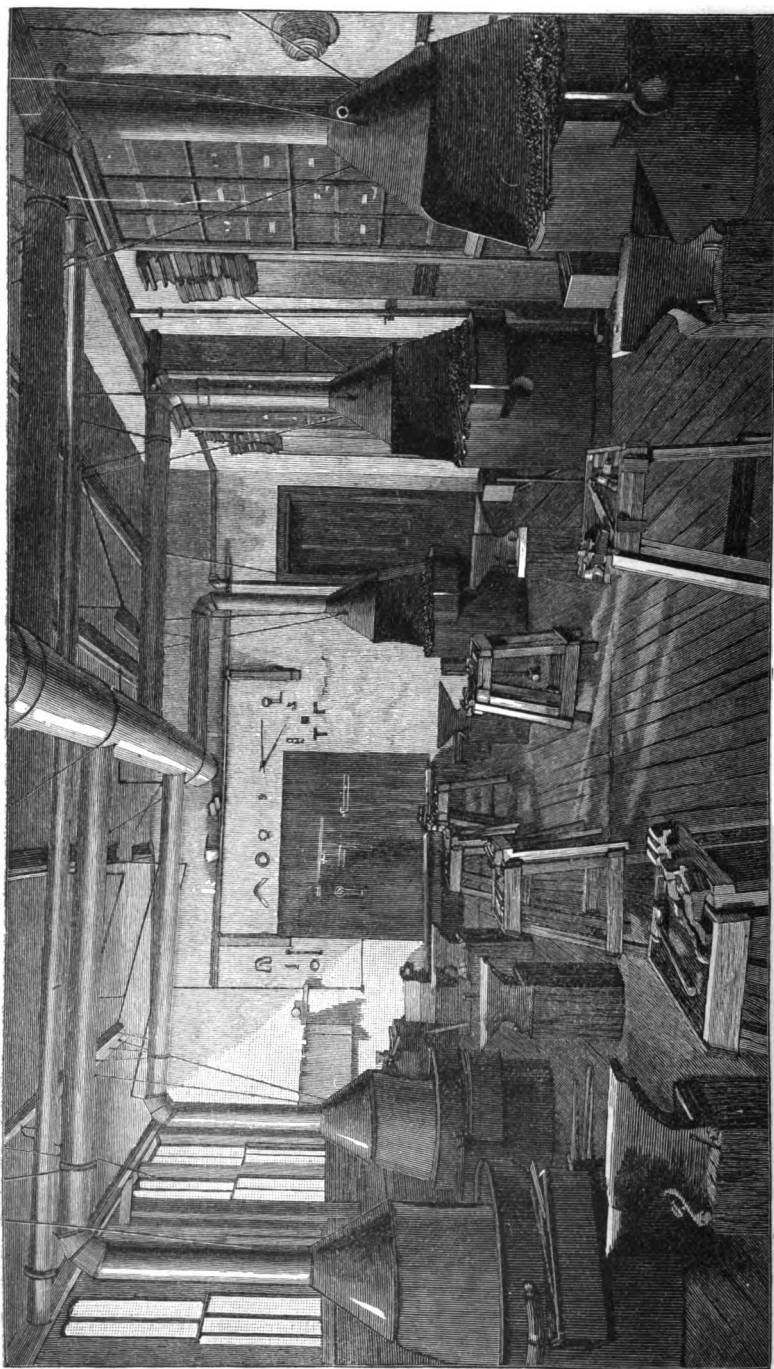
The Chipping, Filing, and Fitting Shop. — This shop contains benches with sixteen vises and other needful appliances, with a planer, grindstone, etc., for which there is no room in the machine-tool shop.

The instruction in forging, vise-work, and machine-tool work is in charge of Mr. Thomas Foley, a thorough and skilful mechanic, who has served his seven years' apprenticeship, and has had, besides, a long and varied experience in his profession. He has a clear comprehension of the problem of mechanic art education; and has, during the past five years, shown equal capacity as a teacher. He recognizes that the student should acquire something besides simple manual training in this department of education. A want of method, a want of appreciation of the ends to be gained on the part of the teacher, are both fatal to the best results. Mr. A. W. Sanborn, a graduate of the school, is Mr. Foley's assistant.

It gives me great pleasure to submit Mr. Foley's report, as follows: —

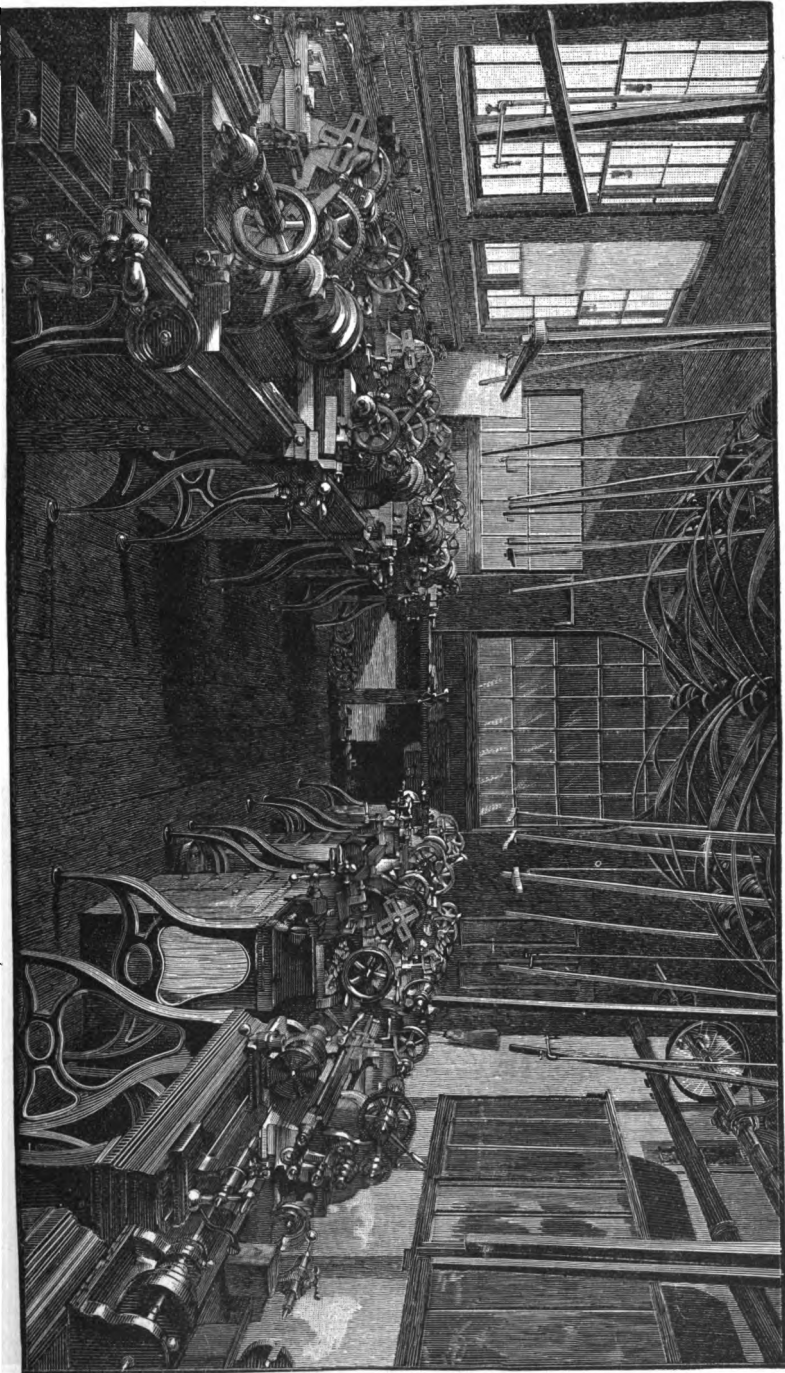
PROFESSOR J. D. RUNKLE.

Dear Sir, — The system of apprenticeship of the present day, as a general rule, amounts to very little for the apprentice, considering the length of



THE FORGING SHOP.

MACHINE-TOOL SHOP.



time he must devote to the learning of his trade. He is kept upon such work as will most profit his employer, who thus protects himself. If the apprentice should be thoroughly taught all branches in the shortest time, he would be likely to leave as soon as he could do better, letting his employer suffer the loss of time devoted to his instruction.

Now, it appears like throwing away two or three years of one's life to attain a knowledge of any business that can be acquired in the short space of twelve or thirteen days by a proper course of instruction. The dexterity that comes from practice can be reached as quickly after the twelve days' instruction as after the two or more years spent as an apprentice under the adverse circumstances spoken of above. The plan here is to give to the student the fundamental principles in such lessons as will teach them most clearly, and give practice enough in the shortest time to acquire a knowledge of the different kinds of tools and various ways of using them. For instance, if a man can make a small article in iron, steel, or any other material, perfectly (by such methods), he can make it of larger proportions with the additional time and help required for such an undertaking. The same in degrees of heat required for fusing or welding metals: if he can do it well in a lesser degree, he can certainly do so in a greater with the additional facilities.

After nearly five years' experience in the workshops in my charge, with the valuable suggestions of the professors so much interested in the success of the school, we find the best results in the time allowed, accomplished by the method now in use in the Institute workshops; viz., three lessons per week of three hours each.

The time is just sufficient to create a vigorous interest without tiring: it also leaves a more lasting impression than by taxing the physical powers for a longer period. We have tried four hours a day, and find that a larger amount of work, and of better quality, can be produced in the three-hour lessons.

In order to give each student the proper credit, and to show him the most important points in each piece, the following method has been adopted for inspection: Take case of bending. The four shapes to the right of 4 on the cut of forgings represent bending of flat and round iron; and the points to be noted by the student are rated as follows:—

Dimensions	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	25
Form	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70
Finish	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5
																				<hr/>
																				100

The most important point in this lesson is the form; the next the dimensions, and the last the finish. Through all the iron-working and other metals in each shop, the same method is carried out. Every piece is made to certain dimensions laid down upon the drawing. The object of working to dimensions is to establish the necessity of correctness in measurement, and is followed throughout the course as a very essential point. The most of the exercises convey the idea of the necessity of straight lines in drawing or lengthening iron, and graceful curves in bending.

The iron-forger's art is comprised of the following terms and movements :—

First, The management of the fire, and the degrees of heat necessary for each particular metal forgeable.

Second, Drawing *down*, or reducing the cross-section.

Third, Bending without materially changing the cross-section.

Fourth, Upsetting, or shortening the piece, and increasing its cross-section.

Fifth, Fagoting, or building up for welding, and welding the same; and welding without fagoting or building up, understood generally as welding.

Sixth, Splitting. } The terms are so well understood that they need no
Seventh, Punching. } explanation.

Eighth, Chamfering, means hammering the edges down to give the piece a light appearance.

Ninth, Annealing steel.

Tenth, Hardening and tempering steel.

Eleventh, Case-hardening iron.

Annealing brass, copper, etc., is often done by the forger, but does not really come under this head, although it is taught in this department.

The varied forms of construction are simply the adaptation of the instruction course to such variation.

Together with the main tools—the planer, lathe, milling-machine, upright drill, etc.—used in the machine course, the uses of each auxiliary tool are thoroughly explained, and sufficient practice given in short lessons to place the student on a par, so far as the general knowledge goes, with the three-years' apprentice.

The methods adopted here are as follows : A sketch of the piece is laid out to the working dimensions on the blackboard for reference during the exercise. The article is then forged in detail by the instructor before the class, calling their attention to each particular point necessary to its successful formation at the same time. There are also duplicate pieces distributed through the shop to refresh the memory and assist the eye in forming. Each student is rated according to the quantity and quality of his work, which is judged by the rules laid down for inspection.

A BRIEF EXPLANATION OF THE COURSE IN IRON AND STEEL FORGING, HARDENING AND TEMPERING STEEL, AND CASE-HARDENING IRON.

The first lesson comprises the building and keeping forge fires in proper condition, upon which depends in a *great* measure the success of forging. It also takes in the degrees of heat necessary for the successful working of the metals in their varied forms. The other lessons will be explained briefly but technically in order corresponding with the number in the cut to be found to the left of each piece, or in the centre of the piece when it can be so placed to advantage.

No. 2. *Cutting Cold Iron, Bevel-Forging, Drawing, Forming, and Bending.*—The bevel-forging is shown in the first form of the piece, but destroyed in taking its final form.

No. 3. *Drawing and Forming.*—Drawing is reducing the cross-section.

Forming will be better understood by the following description of the entire piece : Drawing from a round piece to form a square, then to form a portion of it octagonal, and lastly to a tapered round point. In this figure welding is introduced to show the necessity of so doing when using common iron (iron most generally used). The result of drawing such material without using a welding heat would be the separation of its parts lengthwise. In this piece the necessity of maintaining straight lines is impressed, and expected to be carried out in future lessons.

No. 4. *Bending* does not change the cross-section as much as drawing. In some cases it is hardly perceptible. This exercise consists of bending round and flat iron in a circular form. The two staples in the centre of the rings take in drawing with the bending, and are made in a useful form only because it can be done as well so without taking up extra time that might be put to a more profitable use.

Let me say here, that all through the course, whenever the principles can be introduced in a useful form without occupying more time than would be spent in a plain form, it is invariably carried out.

No. 5. *Welding, Fagot-Welding*. — This lesson is intended to show how iron can be increased in size by joining a number of pieces together by welding where it could not be done so easily or profitably by upsetting.

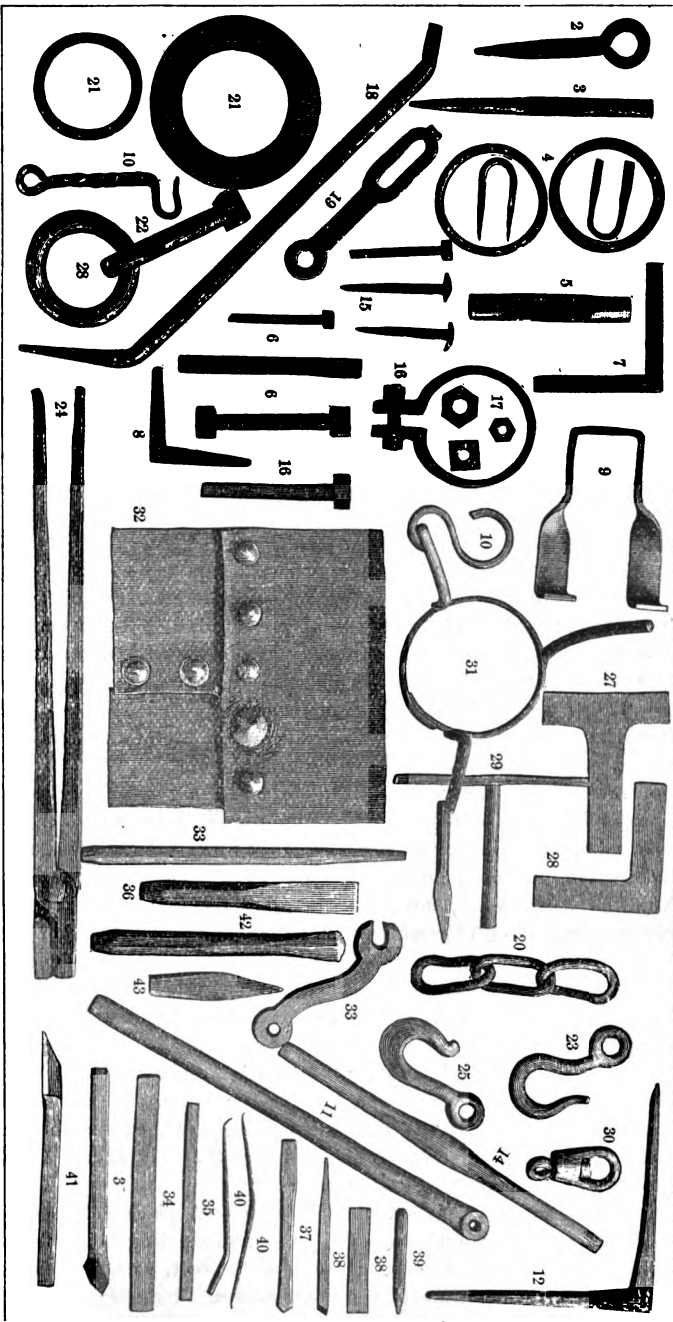
No. 6. *Upsetting, and Bolt-Making by Upsetting*. — Upsetting shortens the piece, and increases its cross-section. The first piece to the right of the figure 6 shows a piece of round iron upset at one end enough to make a square from the round of the same dimensions as the diameter of the round, and intended as preparatory to the working of the other figure to the right, — a bolt upset in the same manner to form the square head, enough being upset at the end of the piece to form the head in a heading-tool.

No. 7. *Upsetting while Bending and Forming*. — This piece, being a square made of square iron with well-defined corners inside and out, is pretty difficult to make by this method if great care is not taken in handling it. This method saves considerable time where it can be used. It is not the strongest form, and only used where neatness in appearance or nice fitting is required.

No. 8. *Upsetting before Bending and Forming*. — This piece being square only on the outside, while the inside corner is round, it is a stronger form, but for purposes differing from fig. 7; viz., a knee, angle-iron, or bracket, as it is termed. Sometimes it is intended to show the different methods of doing work similar in construction.

No. 9. *Bending and Twisting*. — Bending in this case (the piece being a floor-timber hanger) is done without upsetting, leaving it strong enough for its purpose by making the inside and outside of the turn rounding. The twisting is simply to bring the other end in position to receive the timber.

No. 10. *Drawing, Bending, and Twisting*. — The object in drawing the ends is to alter the form from square to round, and also make it lighter where the hook and eye are turned, the bending of which has already been described. The twist in the centre of the square part is intended to show how this part of ornamental work is done. The other figure No. 10, an S hook, as it is termed, is a part of this lesson, and is intended to accustom the student to the graceful curving of iron.



THE COURSE IN FORGING.

No. 11. *Upsetting, Welding, Forming, and Punching.* — A tool for making the heads of bolts, rivets, etc., known as a heading-tool.

No. 12. *Upsetting, Drawing, Bending, Chamfering, and Punching.* — This piece, a bracket, combines the movements designated by the heading of the lesson. We find, in such combinations throughout the course, that it keeps the student well up in memory (and practice with the hands) of the past lessons.

No. 13. *Bending, Drawing, Welding, and Forming.* — In this combination the ring is made in three pieces, involving the above movements. The object of this piece is to show how large bands of this form can be made with economy of time and material.

No. 14. *Butt or Jump Weld.* — This piece is intended to show how a swell can be made in the centre, or any other point, of the bar; also to show the treatment such welds should receive after welding, in order to preserve the strength of the weld.

No. 15. *Drawing and Upsetting in Heading-Tool.* — Rivets and clout or dog nails are what has been made in the tool No. 11. The main feature in the lesson is making the required shaped head, and keeping the body of the piece in the centre of the head.

No. 16. *Upsetting and Drawing.* — One of the hexagonal-headed bolts was made by upsetting the bolt to form the head. The other, a small one, No. 16, will be found forming a part of No. 13, and was made by drawing the body of the piece, and forming the head out of the stock from which the body was drawn. The object of this lesson is to give the necessary practice required to form the sides of the head uniform.

No. 17. *Punching. Making Square and Hexagonal Nuts.* — In this lesson the different methods of making nuts by the use of the hammer alone, and by the use of the hexagonal tool, are carried out.

No. 18. *Upsetting, Punching, Welding, and Fitting.* — This piece, a solid eye-stay or brace, as it is termed, besides the combination used in former lessons, takes in fitting or setting the piece to a given angle as a support. Countersinking for screw-heads is also included.

No. 19. *Punching, Splitting, Forming, and Welding.* — This form of hasp is only introduced to give practice in splitting, along with the other processes.

No. 20. *Bending, Scarfing, and Welding Round Iron.* — The links of chain that form the lesson introduce a different scarf for welding from the ordinary one of straight round iron. The twisting of the chain is also brought in here.

No. 21. *Bending and Welding Flat and Edgewise.* — The two pieces numbered as above are close together on the plate, and need but little explanation on account of the correctness of their delineation, the difference in the shape of scarfing before welding being the only excuse for making this remark as the point of the lesson.

No. 22. *Drawing, Bending, and Welding.* — A piece well known as an eye-bolt or ring-bolt, the manner of shaping and scarfing being the particular points in the piece. A nut at the end of the bolt, with a screw cut upon it, will be described at the close of the lessons. This figure will be found upon the cut in conjunction with No. 28, a ring welded after being passed through the eye making the piece complete.

No. 23. *Drawing, Welding, and Forming.*—The main point in this piece is the formation of the eye by turning and welding it in such a manner as to make it appear as a solid piece of metal punched and worked out. It is only intended, as a general thing, for work to be finished. The figure itself is intended for a rope-hook.

No. 24. *Drawing, Punching, Upsetting, Welding, and Riveting.*—In introducing this piece it is considered necessary that the student should be able to construct one of the most essential tools used in the art of forging; viz., a blacksmith's tongs; and, as it combines nearly all that has been gone through in former lessons, it naturally brings to mind what might be lost in a measure without such a combination of them.

No. 25. *Punching, Drawing, and Forming.*—The piece here represented differs only in the formation of the eye (by punching) and the hook part (by flattening, to give it greater strength) from No. 23. This hook is used generally as a chain-hook.

No. 26. *Scarf-Welding, Flat Iron. (Common Iron.)*—This piece, an L or right-angled weld, has to be scarfed in a different manner from any thing before in this course, and on this account it is brought in here, with the additional point, squaring the piece.

No. 27. *Scarf-Welding, Flat Iron. (Norway Iron.)*—A different form of scarf from last number. It is what is termed a T weld, and the peculiarity of the scarf is one of the most essential points; another, the forming of the piece before taking a second welding-heat, in order to give the piece the appearance of being solid. In this lesson we use the best of iron, and in the last poor iron, or what is in common use: by this means the student is brought to see the difference of treatment in welding the two qualities of iron.

No. 28. *Bending and Welding.*—The figure with the number above attached in the cut is a ring welded after being passed through the eye of the ring-bolt No. 22, making the two as one complete piece, a ring-bolt. The most particular feature in this piece is the forming of the scarf in such a manner as to make the welding of it easy.

No. 29. *Jump Weld, Round upon Flat.*—The round and flat iron welded in this way clearly shows by their scarfing how any other shaped iron can be welded together in the same way. In this piece the scarfs differ from the former scarfs materially. The varied uses to which the piece can be put can easily be perceived.

No. 30. *Drawing, Forming, Punching, and Welding.*—This combination brings into play some difficult movements in order to produce a sound swivel, as the piece is termed. One of the pieces forged in lesson No. 15 forms the revolving portion of the piece when complete.

No. 31. *Bending and Riveting.*—The tripod with this number in the centre, although it takes in bending, is intended more particularly to show how riveting cold iron is done. By the addition of bending, it leaves the piece in a useful form.

No. 32. *Scarfing, Riveting, and Calking Boiler-Plate.*—The object of this lesson is to show how iron plates can be put together, and made steam-tight. Some of the rivets are riveted with the use of a heading-tool, and some are riveted in the ordinary way with hammers. The piece is afterwards calked to make it tight, with a tool termed a calking-tool.

No. 33. *Steel-Forging*. — Cast steel of different grades and different manufactures is introduced throughout the course of steel-forging. Spring steel, too, is taken in, and the many ways of determining the quality and method of treating it in its various changes.

The first piece, No. 33, is an S wrench, — to be finished in the filing course, where the reasons for so doing are explained. In forging this piece the degree of heat necessary for the successful working of steel is practically illustrated by the instructor, and consequently very few failures occur. Annealing, or softening, hardening, and tempering, comes in at the close of the steel lessons.

No. 34. *Welding Steel and Iron together, and Steel and Steel together*. — A flat piece of iron and steel are welded together, after the very essential preparation in scarfing, and then the steel and steel are welded, making the piece complete in six inches in length.

No. 35. *Forked or Split Weld. (Steel and Iron.)* — A form of welding in more general use than any other; and, wherever it can be used with convenience, insures economy in time and strength in the piece, being supported on each side by the iron, making, as a general thing, a better weld or more substantial piece.

No. 36. *Tapers and Bevels. (Cast Steel.)* — A blacksmith's punch and cold-chisel, numbered as above, upon the cut, is intended to carry out the heading of the lesson, making true tapers and bevels throughout.

No. 37. *Drawing and Forming*. — The first one, a right-hand, diamond-pointed lathe-tool (to be used in the machine-shop). The correctness of its shape and temper prompts the student to have it as near perfect as possible, on account of having to use the same tool in his future work.

The second, a ratchet drill (its shape and temper differing considerably from a lathe or vertical drill) is clearly explained, while in comparison the other forms are shown at the same time.

No. 38. *Drawing Tapers and Bevels*. — The first piece of this number, a graver or diamond-pointed hand-tool (to be used in the machine-shop course), is plain in its appearance; but the main point is the tempering of the piece.

The second, a matching-tool, a wood-working revolving tool. The object in introducing this plain form is to show in the last lesson (tempering) how such wood-working tools as moulding, planing, and matching tools should be tempered to insure comparative success in working wood.

No. 39. *Tapers and Bevels. (Drawing Cast Steel.)* — The first piece, No. 39, is a cape-chisel, used for cutting grooves in iron or any other metal. It is formed from a square to an octagonal form, to give practice in changing steel, as well as iron, into different shapes; but the main point is the formation of the chisel part of the piece. The second piece, No. 39, is a centre-punch, a tool in use among nearly all metal-workers.

No. 40. *Drawing and Shaping*. — The first piece, No. 40, is cast-steel offset spring. The second, a half-elliptic spring, made of spring steel. The object in introducing the different kinds of steel for this purpose is to show the difference in methods of tempering each, one being hardened in water, the other in oil.

No. 41. *Drawing and Shaping. (Cast Steel.)* — A right-hand side tool, to be used in course in machine-shops.

No. 42. *Drawing and Bevelling. (Cast Steel.)* — A stone-drill, the correct form and temper being the main features in the piece.

No. 43. *Drawing, Punching, and Tapering. (Cast Steel.)* — A riveting hammer. The idea of bringing as many tools used in working iron into the course as possible has been carried out as far as consistent with the time allowed for giving a general knowledge of the manipulations. At the close of the course, hardening and tempering are explained. A set of the pieces is hardened and tempered before the class. Then each student tempers his pieces, and they are then tested to see if they are fit to do the work intended for them.

An excuse must be made for the incorrectness in the shape of some of the pieces, as they are the forms made by the students; but I think an impartial judge would allow that they will compare favorably with work done daily by blacksmiths with as many years' experience as the student has had days.

The use of stocks and dies for screw-cutting, and drills, countersinks, etc., is taught also.

DESCRIPTION OF COURSE IN VISE-WORK.

A given time is allowed for the completion of each piece. If a student completes his work within the given time, he is allowed to take the next piece, or make any article he chooses, to use up the time allowed for the lesson. Each lesson in filing is varied in such a manner as to insure the introduction of the different shaped files, and their application to the varied forms.

The machine and filing course, occupying the same plate without regard to their precise order, must necessarily be followed by number, without regard to position.

The pieces intended for filing are planed in order to remove the rough scale so detrimental to files. The pieces, however, are planed out of true, in order to have the student bring the piece to perfection by the use of the file.

LESSON 1. No. 17. *Filing to Line.* — A plain block of cast iron, a certain amount of which is filed off true to given lines struck off by the planer. In this piece the student is taught how to regulate the movement of the file in order to produce a true surface, with the assistance of a straight edge.

LESSON 2. No. 17. — The side and end are filed square with first true surface, a steel square being used to assist in its formation.

LESSON 3. No. 18. *Cast Iron.* — On one side of piece No. 17 a half-hexagonal form is laid out and lined in the vise by the student, and finally finished in that form with the file. In this case the one block is made to do service in the three lessons, saving time and material.

LESSON 4. No. 19. *Cast Iron.* — The object of this piece is to show the different shaped files used in making rack-teeth. This lesson shows how any sharp-bottomed piece can be formed, aside from the rack.

LESSON 5. No. 20. *Dovetailing. (Wrought Iron.)* — This piece introduces drilling, sawing, chipping, and filing. The difference and method of working the two materials, cast and wrought iron, are brought out in this lesson, comparing the method of finishing with the last lesson.

LESSON 6. No. 21. — A cast-steel wrench, made in forging course, intro-

duces inside and outside curve-filing, square hole filed from a round one, also draw-filing.

LESSON 7. No. 22. *Parallel Fitting Tongues and Grooves.* — An iron casting, lined out by the student and fitted in the form represented; the perfection of which is a good indication of the progress made after the few lessons already taken.

LESSON 8. No. 23. *Freehand Filing, with use of Hand-Vise.* — A round cast-steel piece reduced in diameter its entire length, and filed at one end to a tapering point; the main feature in the piece being a true taper, and having the point in the centre of the body.

LESSON 9. No. 25. — Comes under the same heading as last number. This piece is reduced the whole length in diameter; then a given portion is reduced still more, in order to form a shoulder on the piece, making what is termed a screw-blank (Material, cast steel.)

LESSON 10. No. 24. — Classed the same as last two numbers. Is a piece of cast steel (round) filed into the shape of an acorn, from memory, by the student.

LESSON 11. No. 26. *Ring-Work. Freehand Filing. (Cast Iron.)* — The blank to the right of the number shows the piece before filing; the one to the left is the finished form. The first form is square around the ring, and finally finished into a round form.

LESSON 12. No. 27. *Chipping Bevels. (Cast Iron.)* — The first form is a plain block, lined upon the planer the distance from the edge intended for the bevel. This piece introduces the use of the flat cold-chisel.

LESSONS 13, 14, and 15. No. 28. — Upon this one block (wrought iron) we introduce key-way or key-seat chipping, half-round chamfering, convex and concave chipping, involving the use of cape-chisels, half-round and flat chisels, and shows the difference in treatment of the two materials; viz., cast and wrought iron. By making one block serve for the three lessons, it saves time, stock, and room.

LESSON 16. No. 29. *Drilling, Chipping, and Filing to Line.* — A planed flat piece of cast iron upon which is laid out or lined an oval shape. All that can be drilled out of it is next done, and the stock remaining within the lines is then chipped and filed to the line.

LESSON 17. No. 30. *Ward-Filing and Key-Fitting.* — A key-blank is taken for this purpose, and filed to given dimensions, and afterwards fitted to the lock.

LESSON 18. No. 31. *Screw-Filing.* — The object of this lesson is to show how a screw can be cut with a file, when the lathe or stocks and dies are not available.

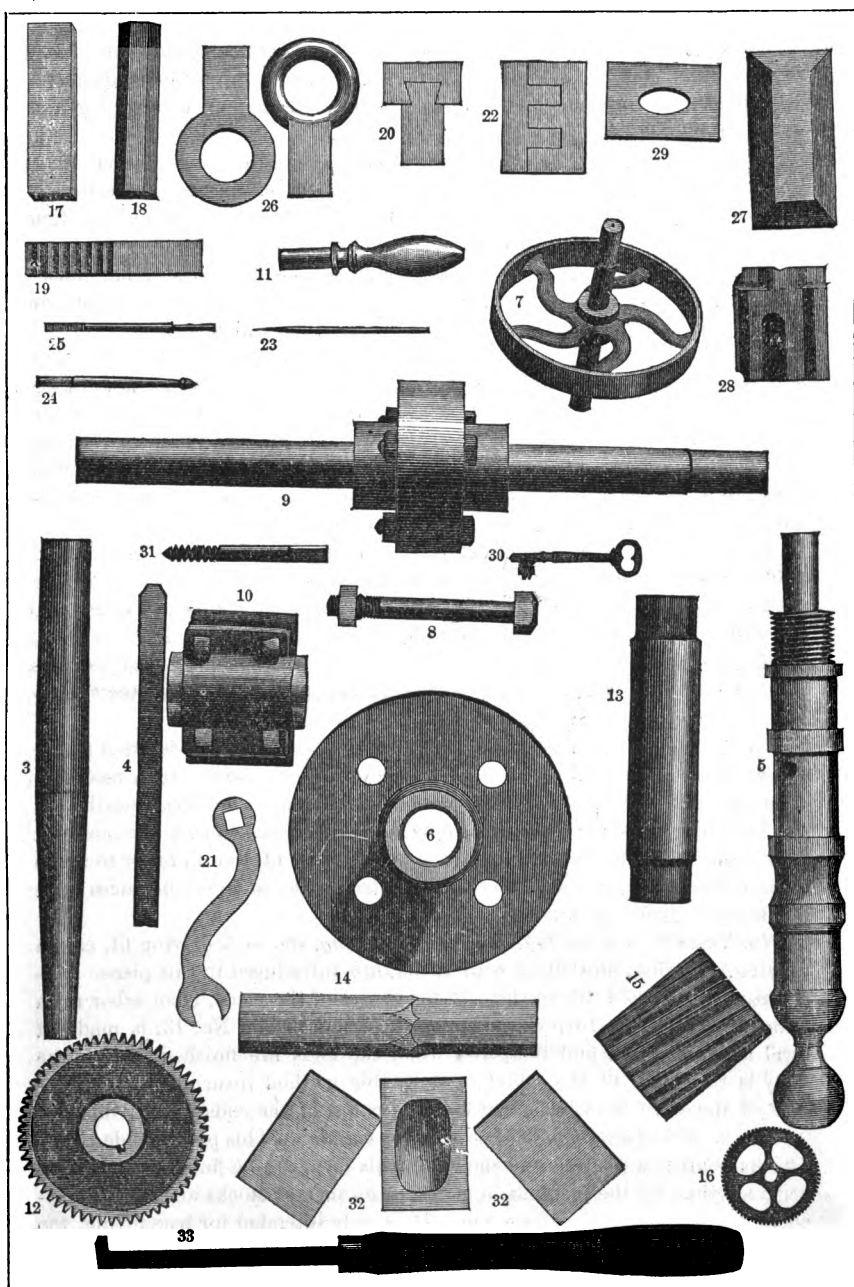
LESSON 19. No. 32. *Scraping.* — The three pieces together with the scraping-tool below them, No. 33, show what is necessary to produce a true surface by this method.

No. 33 is a very fine piece of forging and tempering, forged and finished in the filing course, and not set down in the forging course, by mistake.

DESCRIPTION OF THE COURSE IN MACHINE-TOOL WORK.

LESSON 1. A screw-cutting or engine lathe is taken to pieces, and each particular piece, used in the construction of the tool, is described in order

COURSES IN MACHINE-SHOP.



that the class may be made familiar with it before using it, and by this means expensive machinery may be saved from unnecessary damage.

LESSON 2. *Centring, Squaring Ends, Roughing and Finishing Chip. (Cast Iron.)*—The piece of cylindrical form is first trued up, afterward centre-drilled, countersunk, squared up on the ends, and then a roughing and smoothing chip.

LESSON 3. *Taper Turning. (Cast Iron.)*—The first piece numbered on the cut is turned two different tapers. The stock of the last lesson is used in this; to save the time centring and squaring up: consequently the first piece, Lesson 2, does not appear upon the cut.

No. 4. *Turning Flat Pieces upon the Edges.*—This piece, a flat chuck-drill, intended for use on piece No. 5, shows how flat pieces can be turned on the sides and chamfered on the ends, and also made into a tool.

A rough wrought-iron piece of cylindrical form centred, etc., as in the case of the preceding piece, but wholly differing in the manner of working it. In this lesson we introduce the tools required for turning and boring wrought iron (differing considerably in form from the tools used in working cast iron); namely, the diamond-pointed tool, side tools, right and left twist drill, flat chuck-drill (with its rest), taper reamer, screw-cutting tool, round-nosed or spoon-shaped tool, parting or cutting-off tool.

The introduction of various auxiliary tools, such as the centre rest, forked centre, square centre, etc., gives a great amount of practice in wrought iron working in this one piece. In this piece may be found centre rest chucking, the different forms of bearings in use, taper fitting, outside screw cutting, drilling through the piece at the end of the taper fit, convex and concave turning with engine and hand or speed lathes, and use of tools accompanying the last-named lathe.

No. 6. *Chucking, Inside Screw Cutting, etc.*—This piece is fitted to the screw cut upon the last piece, showing the uses of the boring-tool, recessing or inside cutting-off tool, on the outside of the piece. The tools described in the former lessons are brought in play, slightly altered to suit the material (cast iron), also the method of facing up the plate of iron in order to make it true, and showing how to lay out and drill holes at equal distances from one another upon a given circle.

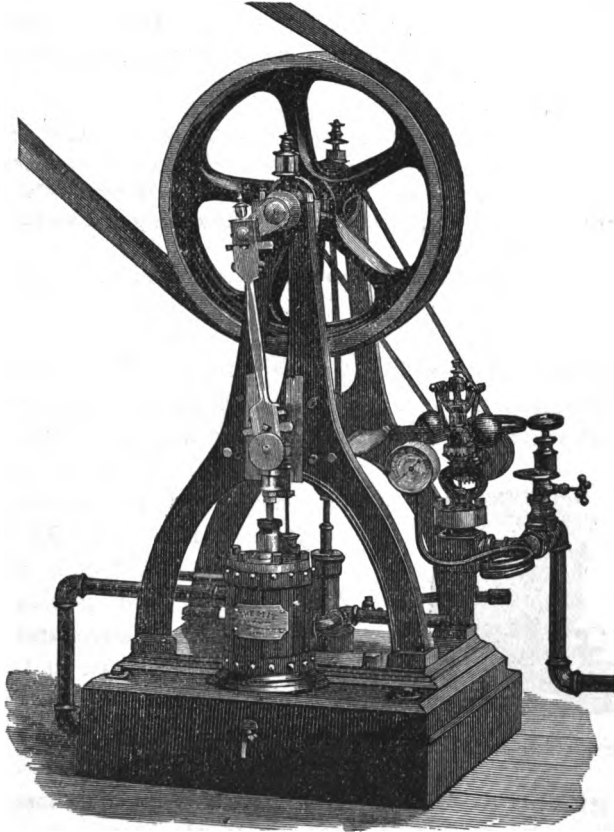
No. 7. *Pulley Chucking, Turning, Reaming, etc.*—A driving fit, crown turning, squaring, and filing with speed, are introduced in this piece. Accompanying it, and driven through the centre of the piece, is an arbor upon which the pulley is turned. This arbor, like the one No. 13, is made of steel annealed first, and tempered when the ends are finished; finally the body is turned to fit the pulley, and by this method insuring the truthfulness of the arbor for a longer period on account of the ends being tempered.

No. 8. *Bolt-Turning, and Screw-Cutting outside.*—This piece, made in the forging course, is used here to show how this form can be finished with more accuracy than by the methods in general use, such as stocks and dies, screw-cutting machines, bolt-cutters, etc. It is only intended for true fitting, too expensive a method for rough purposes, but invaluable for service in first-class machinery. The tapping of the nuts by the machine-tap, and finishing of the nuts, are also brought in in this lesson.

No. 9. Shows the turning and fitting of shafting couplings, or any other

piece where a driving or running fit is required. Key-seat cutting, splining, key-fitting, etc., with the use of planer, hand-splining tools, etc., for this purpose.

No. 10 introduces the use of the planer in fitting the two parts of the box and bottom of the piece, termed a pedestal or pillar block. The lesson also shows how the bolt-holes should be laid out and drilled in order that the bolts should have a proper bearing in connecting the cap and bottom of the box, so as to make a substantial bearing for the introduction of the



STEAM-ENGINE CONSTRUCTED BY A. W. SANBORN.

main feature of the lesson; viz , a boring-bar, a tool used for boring engine-cylinders, etc In this piece although upon a small scale, is carried out each particular point required on a larger scale.

No. 11. *Brass-Turning*. — In this single piece the uses of the various tools for outside turning, at the same time the reverse tools for inside turning, are explained. The main point in the lesson is to show the great difference in the shape of the tools required for use upon the softer metals.

Nos. 12, 13, 14, 15, and 16 are pieces worked out in the Universal Milling Machine.

The uses of the index-head, gear-cutting, straight and bevelled, the many-sided forms that can be cut with the help of the index-head, spiral cutting, use of vise attached to the machine, etc., — all the movements necessary to accomplish any of the pieces, — are executed by the students before actual work is commenced. By this means they become familiar with the working of it, and consequently have more confidence in themselves, and are less liable to damage the machine or tools.

Nos. 12 and 16 represent gear-cutting.

No. 13. — An arbor used in connection with No. 15 in spiral cutting.

No. 14. — A piece of plain milling, six sided on one end and seven upon the other.

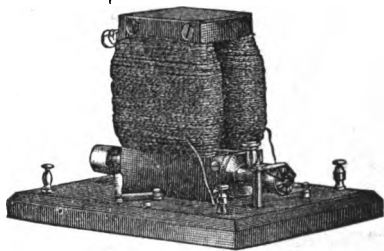
No. 15. — A piece of spiral cutting.

Many other pieces are drawn in, such as fluting reamers, taps, etc.

After acquiring a knowledge of the use of the tools by this method, the student takes in hand a piece or machine of his own design, — for instance, a lathe, steam-engine, etc., — thus showing how easily this method can be applied to construction.

With this closes the present course of instruction in use in the machine-shop.

It has been supposed that these elementary shop courses could not be so conducted as to give the students much notion of any specific applications in construction; but any one who will study



ELECTRIC MACHINE MADE BY H. M. POPE.

Mr. Foley's report carefully will, I think, come to a different conclusion. As illustrations I insert cuts of work done by two pupils, whose whole knowledge and experience were gained in the shops during their two years' course. But the time devoted to shop instruction is too short to enable

all students to show in a like way, and to the same extent, what they can do in application. If the course were three years, each student could devote the time allotted to shop instruction during the third year, in working out one or more of his own designs, which would be a proper termination of his shop studies in connection with the school.

MECHANIC ART INSTRUCTION

IN THE STATE COLLEGE, ORONO, MAINE.

President Fernald says, "This instruction was introduced into our Department of Mechanics four years ago, and has been prosecuted with constant interest and success. We have established, in shops of a temporary character, two courses,—vise-work and forging, carrying out the system much as is done in the Massachusetts Institute of Technology. Pupils take to the work with zeal, and their progress in it has been in the highest degree satisfactory. The number of lessons in vise-work is forty-two, of three hours each, five per week. The course includes twenty-three different pieces. Sometimes the class has been divided, each section working on alternate days. The course in forging includes twenty-eight pieces, with lessons in length the same as in vise-work, and about the same number. At the earliest date possible we design to extend the system in our college. We do not regard the work as interfering with other studies, but as constituting a part of a carefully devised scheme, or course of study, in which it is entitled to the time required. It is scarcely possible that manual skill can be acquired in accordance with a definite and progressive plan of work, in which the principles and processes are made prominent, without at the same time giving a certain amount of intellectual discipline, an amount by no means unimportant."

THE DEPARTMENT OF MECHANIC ARTS,

PURDUE UNIVERSITY, LAFAYETTE, IND.

In 1879 the collegiate department of the university was re-organized, and made to embrace three courses,—the scientific, the agricultural, and the mechanical. An "experimental station" was attached to the agricultural course, and workshops to the mechanical course. Mr. William F. M. Goss, a graduate of the School of Mechanic Arts of the Massachusetts Institute of Technology, was appointed instructor in mechanics. Mr. Goss has furnished me with a plan of the shops, and a very full account of the equipment and method of instruction

pursued in them, from which I have made the following condensed statement:—

“Applicants for admission to the mechanical course must be over sixteen years of age, and pass satisfactory examinations in the common branches, elementary algebra including quadratic equations, history of the United States, physical geography, and physiology. Graduates of high schools, who hold a certificate of the State Board of Education, are admitted without examination.

Mechanical Course.

N.B. — The required branches are printed in SMALL CAPS.; the elective branches in *Italics*.

FRESHMAN YEAR.

SHOP PRACTICE.			
1st Term.	WOOD-WORK.	CARPENTRY.	GEOMETRY. INDUSTRIAL DRAWING.
2d Term.	{ PATTERN- MAKING. }	{ PATTERN CONSTRUCTION. CASTING AND FOUNDRY. }	GEOMETRY. INDUSTRIAL DRAWING.
3d Term.	VISE-WORK.	MACHINE-DRAWING.	{ GEOMETRY, 6 w. ALGEBRA. } INDUSTRIAL DRAWING.

ENGLISH COMPOSITION, one lesson a week; *Military Tactics*, three exercises a week.

SOPHOMORE YEAR.

SHOP PRACTICE.			
1st Term.	FORGING.	MACHINE-DRAWING.	HIGHER ALGEBRA. ANCIENT HISTORY.
2d Term.	MACHINE-WORK.	MACHINE-DRAWING.	TRIGONOMETRY. PHYSICS.
3d Term.	MACHINE-WORK.	MILL-WORK; MACHINERY.	SURVEYING. PHYSICS.

LITERARY EXERCISES, one a week; *Military Tactics*, three exercises a week.

The shop practice includes two hours of actual work in the shop daily, five days each week. Students who wish to take a course in Mechanical or Civil Engineering will be admitted to the School on the completion of the above course. The School of Engineering will be opened in September, 1882.

Explanation of the Plan.—Room *A* is the main shop for wood and iron work; *B* and *C* are the forging shops; *D* is a storage-room; *E* is used by the chemical department. No. 1, machine lathe, 6-foot bed; 2, machine lathe, 3-foot bed; 3, wood lathe, 9-foot bed; 4, speed lathe, for centring and finishing, 3½-foot bed; 5, four wood-turning bench lathes, 5-foot bed; 6, machine planer, 3½-foot bed; 7, vertical drilling machine; 8, double emery-grinder; 9, grindstone; 10, scroll-saw; 11, small fret-saw; 12, circular saw, both rip and cross cutting; 13, Sturtevant blower; 16, shaft running between engine-house and shop; the pulleys, 14 and 15, distribute the power from this shaft to the line-shafts of the shops (not shown), by which all of the above machinery is driven; the shaft, 16, is coupled directly to the engine shaft; 17, nine wood-working benches; 18, vises to each bench; 19, two iron-working benches; 20, eight Parker vises for iron-work; 21, instructor's table; 22, table for student work; 23, closet for miscellaneous wood-working tools and supplies; 24, cabinet for chucks, drill-gear, etc., for the machines; 25, cabinet of closets for students' clothes; 26, closet for iron-work supplies, files, bolts, etc.; 27, sink provided with wash-basins; 28 and 29, cabinets for lathe-tools; 30, four wrought-iron forges; 34, four anvils; 35, four tool-racks; 36, portable forge; 37, case for forge-work; 38, bench; 39, vise; 40, racks for iron and steel; 41, closet for paints and oils;

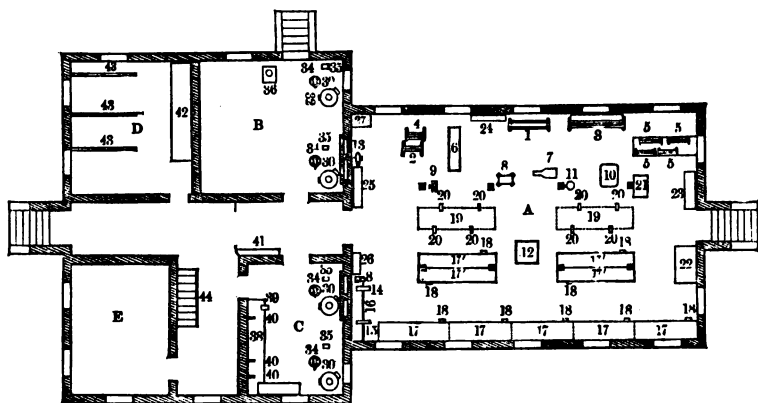
42, bench for storing small pieces of lumber; 43, rack for stock of lumber; 44, stairs to upper floor; 45, entrance steps.

The Shop Instruction is divided as follows:—

Bench-work in wood	12 weeks	(120 hours).
Wood-turning	4 weeks	(40 hours).
Pattern-making	12 weeks	(120 hours).
Vise-work in iron	10 weeks	(100 hours).
Forging in iron and steel	18 weeks	(180 hours).
Machine-tool work in iron	20 weeks	(200 hours).

The object of the shop instruction is, first, to prepare students for a course of mechanical engineering; and, second, as a preparation for some industrial pursuit.

Method of Instruction.—We have series of unchanging principles which must be taught practically through the use of corresponding sets of tools; and, while series of models are principally used, we vary these with each class in form and dimensions, always keeping in view the principles to be taught. Another feature is to make the models assume a form which may,



PLAN OF THE MECHANIC ARTS SHOPS, PURDUE UNIVERSITY.

if possible, afterwards be utilized. The principles involved will always be of *prime*, and the utilization of *secondary*, consideration.

Course in Carpentry and Joinery.—1, Exercise in sawing and planing to dimensions; 2, application; a box nailed together; 3, mortise and tenon joints; a plain mortise and tenon; an open dovetailed mortise and tenon (dovetailed halving); a dovetailed keyed mortise and tenon; stock 2" thick, worked to 1½"; mortise pieces 10" long, and tenon pieces 6" in the clear; 4, splices; 5, common dovetail; 6, lap-dovetailing and rabbeting; 7, blind or secret dovetail; 8, mitre-box; 9, carpenter's trestle; 10, panel-door; 11, roof-truss; 12, section of king-post truss roof; 13, drawing models. Elements applied in simple forms in each case.

Wood-Turning.—1, Elementary principles, 1st straight turning, 2d cutting in, 3d convex curves with the chisel, 4th compound curves formed with the gouge; 2, handles; 3, mallets; 4, picture-frames (chuck-work); 5, card-receiver (chuck-work); 6, match-safe (chuck-work); 7, ball. The articles

present good forms for learning the art, and each of the last three a new and difficult feature of chucking.

Pattern-Making. — The student is supposed now to have some skill in bench and lathe work, which will be increased; but the direct object is to teach what forms or patterns are in general necessary, and how they must be constructed in order to get a perfect mould from them. We have not thought it necessary that each student should do the same examples to accomplish this object. In this way the work has been much more varied: each student learns the particular features in the work done by his neighbor, and gets a much broader knowledge than could in the same time be acquired in any other way. Besides simple patterns easily drawn from the sand, such as glands, ball-cranks, etc., there followed a series of flanged pipe-joints for $2\frac{1}{2}$ " pipe, including the necessary core-boxes, in which all took part; then pulley patterns from 6" to 10" in diameter, built in segments for strength, and to prevent warping and shrinkage; lastly, a complete set of patterns for a three-horse-power horizontal steam-engine, all made from drawings of the finished piece.

Vise-Work in Iron. — 1. Given a block of cast iron 4" by 2" by $1\frac{1}{2}$ " in thickness, to reduce the thickness $\frac{1}{4}$ " first by chipping, and then finish with the file. 2. To file a round hole square. 3. To file a round hole into an elliptical one. 4. Given a 3" cube of wrought iron, to cut a spline 3" by $\frac{3}{8}$ " by $\frac{1}{4}$ ", and, 2d, when the under side is a one-half round hollow. These two cuts involve the use of the cape-chisel, and the round-nose chisel, and are examples of very difficult chipping. 5. Round filing, or hand vise-work, with the same examples as are given in the cut illustrating the course at the Institute of Technology. 6. Scraping. 7. Some special examples of fitting.

Forging. — 1. Elementary processes, drawing, bending, upsetting. 2. A course in welding. 3. Miscellaneous forgings. 4. Steel-forging, including hardening and tempering.

Machine-Work. — In this course we have used no set models, the work varying more or less with each class. But the aim is to teach centring, plain and taper turning, taper fitting, screw cutting, to bring in all the adjuncts of the machines, and to give practice in their use. All students are not upon the same work at the same time; but each during his course has an opportunity of learning the use of all the tools and appliances. Nor is a given time allotted to each piece. The slow ones must work extra time to keep up, while those who are quick are given extra work. All students are required to devote all the time allotted to each shop course, and not allowed to pass from one to another in advance of the class, unless they are proficient and can enter a regular class in an advanced branch.

The shop instruction is supplemented by a course of lessons on the theory of the hand and machine tools; more or less use being made of Shelley's "Workshop Appliances," Rose's "Practical Machinist," and notes found in the first two volumes on "Building Construction" published by Rivingtons.

I regret that I cannot devote more space to Mr. Goss's interesting account of the good work he is doing at Purdue, which is heartily indorsed by President White.

THE MANUAL TRAINING SCHOOL
OF WASHINGTON UNIVERSITY, ST. LOUIS, ESTABLISHED
JUNE 6, 1879.

Professor C. M. Woodward, the director of this school, has furnished me with the following details of cost, the cuts representing the building and floors, and the excellent statement hereto appended. Building cost twelve thousand dollars; tools and furniture, eleven thousand; land, six thousand: total, twenty-nine thousand dollars. About one-third of the one hundred and two pupils are on free scholarships held by the founders. Mr. Samuel Cupples pays two hundred and fifty dollars per month for five years (fifteen thousand in all) for current expenses. This with tuition-fees will about cover expenses for the five years from date of foundation.

GENERAL STATEMENT.

Conditions of Admission. — Candidates for admission to the first-year class must be at least fourteen years of age, and each must present a certificate of good moral character signed by a former teacher.

They must also pass a good examination on the following subjects: —

1. Arithmetic; including the fundamental rules, common and decimal fractions, the tables of weights, measures, and their use. Candidates will be examined orally in mental arithmetic, including fractions and the multiplication-table up to twenty. 2. Common-school geography. 3. Spelling and penmanship. 4. The writing of good English.

Candidates for the second-year class must be fifteen years of age. All that is specified above will be required of them, and, in addition, the studies and shop-work of the first year.

Similar requirements apply to those desiring to enter the third-year class.

Course of Study. — The course of instruction covers three years, and the school-time of the pupils is about equally divided between mental and manual exercises. Neither intellectual nor physical labor is carried to the extent of weariness.

The change from recitation to the shop, and from shop to study and recitation, is agreeable and healthful, keeping both mind and body fresh and vigorous.

Mental Training. — In mathematics the course of instruction is thorough, but not extended. Arithmetic, algebra, geometry, and plane trigonometry are studied in succession. The application of these branches is made in book-keeping, mechanical drawing, physics, mechanics, and mensuration.

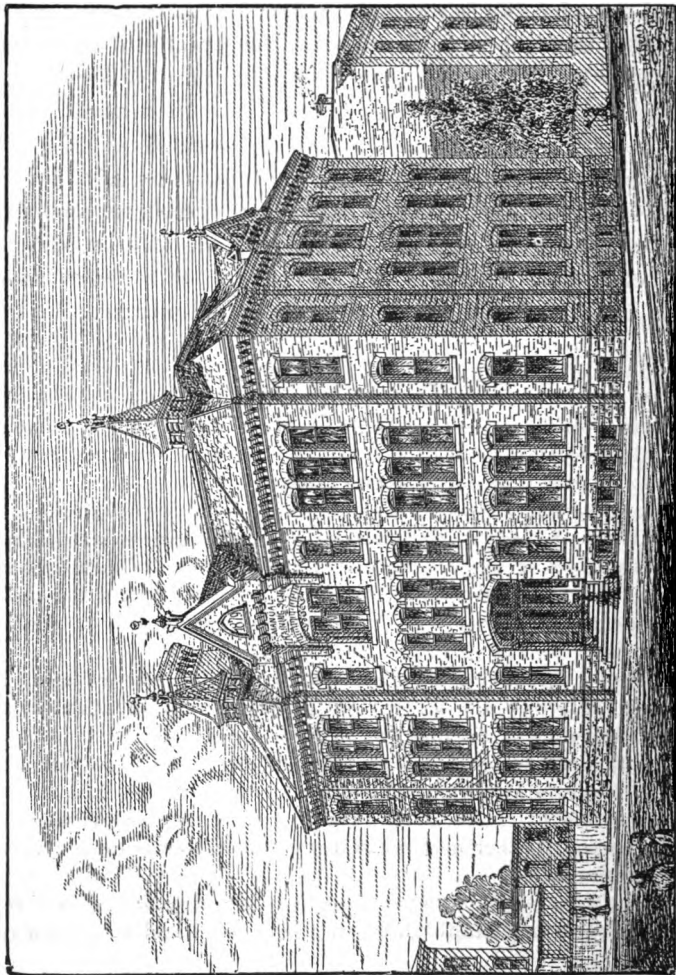
Careful attention is given to physical geography.

The English language and literature is carefully studied throughout the

course. Every graduate of the school will have a fair command of the English language, whether in writing or speaking.

History, practical ethics, and political economy each finds a place on the programme, the treatment of each subject being adapted to the capacity of the class.

Manual Training. — Special attention is paid to drawing during the



MANUAL TRAINING SCHOOL, WASHINGTON UNIVERSITY, ST. LOUIS.
(Floor Plans on opposite page.)

whole course. Drawing is the shorthand language of modern sciences. Careful drawings are to technically educated people what pictures are to children. They show at a glance what it is not in the power of words to express. It is a universal language, and should be read and understood by all.

The course in drawing embraces three general divisions: —

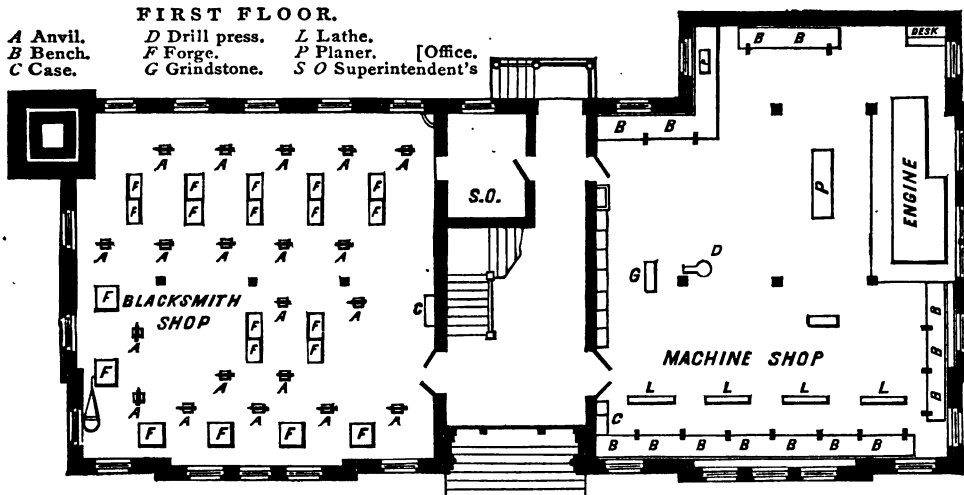
FIRST FLOOR.

A Anvil.
B Bench.
C Case.

D Drill press.
F Forge.
G Grindstone.

L Lathe.
P Planer.
S O Superintendent's

[Office.]



SECOND FLOOR.

B Bench.

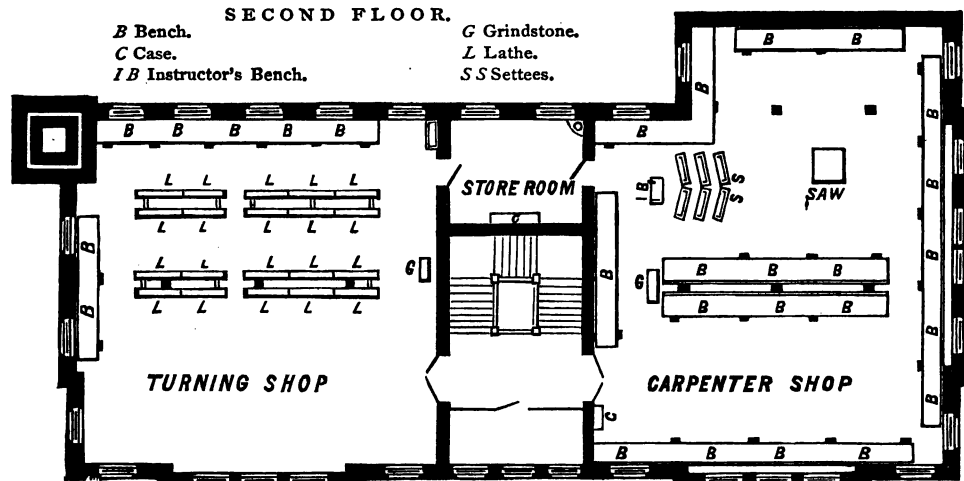
C Case.

IB Instructor's Bench.

G Grindstone.

L Lathe.

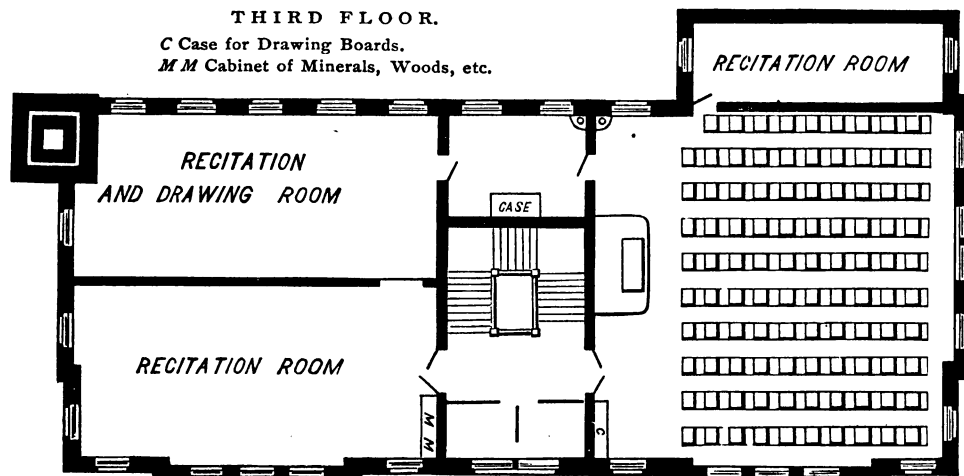
SS Settees.



THIRD FLOOR.

C Case for Drawing Boards.

MM Cabinet of Minerals, Woods, etc.



1. *Freehand Drawing*, designed to educate the sense of form and proportion, to teach the eye to observe accurately, and to train the hand to rapidly delineate the forms either of existing objects or of ideals in the mind.

2. *Mechanical Drawing*, — including the use of instruments; geometric constructions; the arrangement of projections, elevations, planes, and sections; also the various methods of producing shades and shadows with pen or brush.

3. *Technical Drawing or Draughting*, — illustrating conventional colors and signs; systems of architectural or shop drawings; and at the same time familiarizing the pupil with the proportions and details of various classes of machines and structures.

Workshop Instruction. — In connection with drawing comes instruction in the nature, theory, and use of tools.

But which are the tools whose use is to be taught? Before answering this question, it is to be observed that the apparently great variety in tools and mechanical processes arises from different combinations of very simple elements. The number of hand-tools is small: one can easily count them on his fingers. They are the *axe*, the *saw*, the *plane*, the *hammer*, the *square*, the *chisel*, and the *file*. The study of a tool involves an examination of its form and the theory of its action, as well as its actual use at the bench or forge. After the hand-tools, pupils should become familiar with the typical machine-tools which are chiefly employed in mechanical pursuits.

A knowledge of materials and processes is as important as an acquaintance with tools. The characteristic properties of different kinds of wood; the difference between cast and wrought iron; the properties of steel, brass, and other materials, — these are learned only by actual contact and personal investigation.

Then the student should understand the relation between different kinds of work, their sequence and mutual dependence.

Thus the making of patterns precedes the use of castings. The castings themselves are planed, bored, drilled, and turned, by the use of special machine-tools. Wrought iron and steel are worked at the forge previously to being used in the machine-shop.

Study and Management of Steam. — The steam-generating apparatus of the university consists of a battery of three large steel boilers set and furnished in the most approved manner. These boilers furnish heat for the entire group of university buildings, as well as steam for the engine in the shop. The engine is of the best pattern and superior workmanship, and is capable of about sixty horse-power. During their second and third years the pupils make a careful study of the engine and furnaces, and are practised in the management and care of them both.

Project for Graduation. — Before receiving a diploma of the school, each student must execute a project satisfactory to the faculty of the school. The project consists of the actual construction of a machine. The finished machine must be accompanied by a full set of the working-drawings according to which the machine is made. If it is not feasible to construct the patterns for castings of such machine, proper directions for their construction must accompany the drawings.

Students have no option or election as to particular studies; each must conform to the course as laid down, and take every branch in its order.

The arrangement of studies and shop-work by years is substantially as follows :—

First Year.—Arithmetic, completed; algebra, to equations; English language, its structure and use; history of the United States; physical geography; drawing, mechanical and freehand; penmanship; carpentry and joinery; wood-carving; wood-turning; pattern-making.

Second Year.—Algebra, through quadratics; geometry, plane; natural philosophy; English history; English composition and literature; principles of mechanics; penmanship; drawing, line-shading and tinting machines, freehand detail drawing; blacksmithing, drawing, upsetting, bending, punching, welding, tempering; use of machine-tools.

Third Year.—Geometry, solid; plane trigonometry and mensuration; English composition and literature; history; ethics and political economy; book-keeping; drawing, machine and architectural; study of the steam-engine; bench-work and fitting; work in the machine-shop, turning, drilling, planing, screw-cutting, etc.; execution of project.

DAILY PROGRAMME. FIRST TERM—1881-82.

Classes.	Divisions.	9—11 A.M.			11 A.M.—1 P.M.				1—3 P.M.			
Second Year.	A.	Shop-work.			40 min. Algebra	40 min. English History	20 min. Study.	20 min. Recess.	40 min. Physics	20 min. Study.	60 min. Draw'g.	
	B.	60 min. Draw'g.	20 min. Study.	40 min. Algebra	Shop-work.				20 min. Recess.	20 min. Study.	40 min. Physics	40 min. English History
First Year.	A.	Shop-work.			60 min. Draw'g.	20 min. Recess.	40 min. Gram'r.		40 min. Arith.	40 min. Study.	40 min. Physic'l Geog.	
	B.	40 min. Gram'r.	20 min. Study.	60 min. Draw'g.	Shop-work.				20 min. Recess.	20 min. Study.	40 min. Arith.	40 min. Physic'l Geog.
	C.	40 min. Arith.	40 min. Study.	40 min. Physic'l Geog.	40 min. Gram'r.	20 min. Recess.	60 min. Draw'g.	Shop-work.				

- NOTES : 1.—Penmanship takes the place of Physical Geography and Physics once a week.
 2.—Each class has Music Lesson once a week, extending the daily session half an hour.
 3.—Composition takes the place of Grammar and History once a week.
 4.—Spelling occupies half the study time three times a week.

Description of the Shops and Tools.—The second floor of the building is devoted to woodwork, and comprises a carpenter-shop, store-room, and turning-shop. Each shop has uniform accommodations for classes of twenty pupils. Four such classes or divisions can be taught daily in each. Each pupil has one of the uniform sets of edge-tools for his exclusive use, kept in a locked drawer. For the care and safety of these tools he is held responsible. Other tools, such as squares, hammers, wrenches, etc., are provided for the use of each class in succession.

The Carpenter-Shop.—This contains twenty benches, vises, and sets of tools for use in common, a power grindstone, the instructor's desk and bench, settees for the class, and the requisite quota of clamps, glue-pots, etc. A double circular-saw machine is provided for getting out stock ("blanks" for a class) and jobbing.

The Turning Shop contains twenty speed lathes, twelve-inch swing and five-foot bed, with complete equipment of face-plates, chucks, etc., for eighty pupils. The shop contains several eight-foot benches for pattern-work, a power grindstone, and a moulder's bench, and tools for illustrating practically the use and handling of patterns for foundry-work.

The Machine-Shop. — The first floor of the building is devoted to metal-work, and comprises the machine and blacksmith shops. At present (December, 1881) the machine-shop is not in use by the pupils of the Manual Training School. [The school has not been in operation quite a year and a half, and hence the students have not yet reached this shop in their course.] It possesses but a partial equipment, consisting of four engine-lathes of fourteen-inch swing and five-foot bed; a speed lathe; a planer, twenty-one-inch by twenty-one-inch by five feet; a twenty-five-inch drill, and a large power grindstone. Ten vises and benches, with forty drawers, afford opportunity for bench-work. By September, 1882, it is expected that this shop will be furnished for a class of twenty students at once. The engine occupies a part of this shop.

The Blacksmith-Shop has its complete equipment of twenty forges, anvils, tubs, and sets of ordinary hand-tools. Ten sets of heavy tools suffice for twenty pupils, as they may work in pairs as "smith and helper." The blast is supplied by a fan blower, and a powerful exhaust fan keeps the shop completely free from smoke and gas. In connection with one of the larger forges is a hand-bellows, which can be used when the engine is not running. Every shop exercise lasts two hours: consequently the shop readily accommodates eighty pupils per day.

All the machinery of the shops is driven by a fine Corliss engine, fourteen-inch cylinder and forty-two-inch stroke, running at sixty-five revolutions per minute. The engine was built specially for the school by Messrs. Smith, Beggs, & Rankin, of St. Louis. Steam is furnished from the university boilers. The building is heated by the exhaust steam from the engine. This equipment of steam-power will furnish to pupils of the third-year class the means of becoming familiar with such machinery on a scale unsurpassed.

The shops throughout contain ample conveniences for the shop-clothing of the pupils, and the basement contains facilities for washing with hot and cold water.

The drawing-room and the two recitation-rooms are on the third floor.

All the shops and other rooms are spacious, and amply lighted, well warmed and ventilated. The location of the building, on the south-west corner of Eighteenth Street and Washington Avenue, is one of the best in the city, being high and healthful.

The Theory of Shop-Work. — The application of the educational idea to mechanic arts is strictly analogous to its application to chemistry and physics. In each, the use of apparatus and the treatment of material is taught by systematic experiments in suitable laboratories. In each, every thing is arranged for the purpose of giving instruction in the principles involved, and for acquiring skill in manipulation, and not for the sake of the production of salable compounds of either drugs or apparatus.

Chemical laboratories might be manufactories, and mixtures might be

made for sale, but the efficiency of such a laboratory for the purpose of education would be very small. So a manufacturing establishment can be made a place for instruction in the use of tools, but its cost would be great in proportion to its capacity, and the variety of work would be limited by its business.

Special Trades are not taught. — The scope of a single trade is too narrow for educational purposes. Manual education should be as broad and liberal as intellectual. A shop which manufactures for the market, and expects a revenue from the sale of its products, is necessarily confined to salable work; and a systematic and progressive series of lessons is impossible, except at great cost. If the object of the shop is education, a student should be allowed to discontinue any task or process the moment he has learned to do it well. If the shop were intended to make money, the students would be kept at work on what they could do best, at the expense of breadth and versatility.

It is claimed that students take more interest in working upon something which, when finished, has intrinsic value, than they do in abstract exercises. This is quite possible, and proper use should be made of this fact; but, if all education were limited to such practical examples, our schools would be useless. The idea of a school is that pupils are to be graded and taught in classes; the result aimed at being not at all the objective product or finished work, but the intellectual and physical growth which comes from the exercise. Of what use is the elaborate solution in algebra, the minute drawing, or the faithful translation, after it is well done? Do we not erase the one, and burn the other, with the clear conviction that the only thing of value was the discipline, and that that is indestructible?

So in manual education, the desired end is the acquirement of skill in the use of tools and materials, and not the production of specific articles: thence we abstract all the mechanical processes and manual arts and typical tools of the trades and occupations of men, arrange a systematic course of instruction in the same, and then incorporate it into our system of education. Thus, without teaching any one trade, we teach the essential mechanical principles of all.

In accordance with the foregoing principles, the shop training is gained by regular and carefully graded lessons designed to cover as much ground as possible, and to teach thoroughly the uses of ordinary tools. This does not imply the attainment of sufficient skill to produce either the fine work or the rapidity of a skilled mechanic; this is left to after-years. But a knowledge of how a tool or machine should be used is easily and thoroughly taught. The mechanical products or results of such lessons have little or no value when completed, and hence the shops do not attempt to manufacture for the market.

As has been said, work of immediate utility is of greater interest to students than abstract lessons. Such work has an undoubted value, and is in many ways desirable, provided it does not hinder or interfere with regular instruction. Opportunities for such constructive work are constantly occurring. The wants of a large institution are many, and when they can be supplied by student skill it is a benefit to all concerned. In this way, outside the stated hours, pupils have the means of applying their knowledge and of

gaining additional practice. The yearly aggregate of such productions is quite large, and it affords undeniable evidence of the efficiency of systematic instruction.

Details of Shop Instruction.—The shop instruction is given similarly to laboratory lectures. The instructor at the bench, machine, forge, or anvil, executes in the presence of the whole class the day's lesson, giving all needed instructions, and at times using the blackboard. When necessary, the pupils make notes and sketches, and questions are asked and answered, that all obscurities may be removed. The class then proceeds to the execution of the task, leaving the instructor to give additional help to such as need it. At a specified time that lesson ceases, the work is brought in, commented on, and marked. It is not necessary that all the work assigned should be finished: the essential thing is, that it should be well begun and carried on with reasonable speed and accuracy.

It is almost useless to say that the personal characteristics of pupils are even more marked in this work than in any ordinary recitation, from the fact that no text-books are used, nor is there previous study. The length of time required by different pupils in a large class for the doing of a specified piece of work varies considerably. Hence additional lessons or constructive work are arranged for the brighter and quicker members.

Work in the blacksmith-shop is in one essential feature different from any other kind. Wood or cold iron will wait any desired length of time while the pupil considers how he shall work, but here comes in temperature subject to continual change. The injunction is imperative to "strike while the iron is hot," and hence quick work is demanded, — a hard thing for new hands. To obviate this difficulty, bars of lead are used, with which the lesson is first executed, while all the particulars of holding and striking are studied. The lead acts under the hammer very nearly like hot iron, and will permit of every operation of the blacksmith's shop except welding. Much is anticipated from its use as a preparation for the working of iron, as each lesson is first executed in lead.

One of the most difficult lessons in the art of the smith is that of managing the fire. The various kinds of heat are explained and illustrated, and habits of economy of both iron and fuel are inculcated.

How the Use of Tools is taught.—Frequent requests have been made for detailed descriptions or drawings of the models actually used in the several shops. Such requests have generally been refused, for several good reasons. In the first place, the main object of one or more lessons is to gain control and mastery of the tool in hand, and not the production of a particular model. The use of the tool may be well taught by a large variety of exercises, just as a knowledge of bank discount may be gained from the use of several different examples. No special merit can be claimed for a particular example; neither can a particular model, or series of models, have any great value. No good teacher is likely to use precisely the same set twice.

Again, the *method* of doing a piece of work, and not the finished piece, may be the object of a lesson. To illustrate: Directions are given to a class in carpentry to saw a piece of wood, holding it upon the bench-dog. A pupil is found attempting to do the work, holding it on a trestle. On being corrected, he insists that he can't do it so well in that way. The teacher

replies, or should reply, "Then that is the way you should do it, until you can do it well." Now, the exercises by which certain methods of using tools are to be taught often depend upon varying circumstances, such as the quality of the material, the age of pupils, and the pupils' knowledge of working-drawings. Instead of giving particular descriptions of exercises, we prefer to state the general methods by which the use of the various tools is taught.

The tools are not given out all at once: they are issued as they are needed, and to all the members of the class alike.

In carpenter-work the tools used are, the crosscut, tenon, and rip saws; steel square, try-square, bevel and gauge, hammer, mallet, knife, rule and dividers, oil-stones and slips; and, of edge-tools, the jack and smoothing planes, the chisel, and gouges. Braces and bits, jointer planes, compass saws, hatchets, and other tools are kept in the shop tool-closet, to be used as needed.

The saw and the plane, with the square and gauge, are the foundation tools; and to drill the pupils in their use numerous lessons are given, varied only enough to avoid monotony. The pupil being able to plane a piece fairly well, and to keep to the line in sawing, the next step is to teach him to add the use of the chisel in producing simple joints of various kinds. The particular shapes are given with the intent to familiarize the pupil with the customary styles and methods of construction.

The different sizes of the same tool (chisels, for instance) require different care, and methods of handling; and the means of overcoming irregularities and defects in material form another chapter in the instruction to be given.

With the introduction of each tool, the pupils are taught how to keep the same in order. They are taught that sharp tools are absolutely necessary to good work: to make them realize this, is a most difficult task.

Turning. — In a general way much that has already been stated applies to wood-turning. Five or six tools only are used, and from previous experience the pupils know how to keep them in order. At first a large gouge only is issued, and the pupils are taught and drilled in its use in roughing out and producing right-line figures; then convex and concave surfaces; then in work comprising all these, — all in wood-turning with the grain. A wide chisel follows, and its use in conjunction with the gouge is taught. After this, a smaller gouge, chisel, and parting-tool, and a round-point are given, and a variety of shapes are executed. Next comes turning across the grain; then bored and hollow work. Next, chucking, and the various ways of manipulating wood on face-plates, chucks, mandrels, etc. Finally, turning of fancy woods, polishing, jointing, and pattern work.

Of the course in iron-work nothing must as yet be said, for the reason that we desire to speak only of work gone over, and that department is not yet fully developed.

The Origin and Purpose of the School. — The Manual Training School owes its existence to the conviction on the part of its founders that the interests of St. Louis demand for young men a system of education which shall fit them for the actual duties of life in a more direct and positive manner than is done in the ordinary American school.

We see in the future an increasing demand for thoroughly trained men to take positions in manufacturing establishments as superintendents, as

foremen, and as skilled workmen. The youth of to-day are to be the men of the next generation. It is important that we keep their probable life-work in view in providing for their education. Excellent as are our established schools, both public and private, it must be admitted that they still leave something to be desired; they do not, and probably they cannot, cover the whole ground.

It is believed that to all students, without regard to plans for the future, the value of the training which can be got in shop-work, spending only from four to twelve hours per week, is abundantly sufficient to justify the expense of materials, tools, and expert teachers.

It is very well understood that many students cannot wisely undertake the full course of intellectual study now laid down for the regular classes of a college or polytechnic school. It occasionally happens that students, who have special aptitudes in certain directions, find great difficulty in mastering subjects in other directions. In such cases it is often the best course to yield to natural tastes, and to assist the student in finding his proper sphere of work and study. A decided aptitude for handicraft is not unfrequently coupled with a strong aversion to and unfitness for abstract and theoretical investigations. There can be no doubt, that, in such cases, more time should be spent in the shop, and less in the lecture and recitation room.

One great object of the school is to foster a higher appreciation of the value and dignity of intelligent labor, and the worth and respectability of laboring men. A boy who sees nothing in manual labor but mere brute force despises both the labor and laborer. With the acquisition of skill in himself, comes the ability and willingness to recognize skill in his fellows. When once he appreciates skill in handicraft, he regards the workman with sympathy and respect.

In a manual training school, tool-work never descends into drudgery. The tasks are not long, nor are they unnecessarily repeated. In this school, whatever may be the social standing or importance of the fathers, the sons go together to the same work, and are tested physically as well as intellectually by the same standards. The result in the past has been, and in the future it will continue to be, a truer estimate of laboring and manufacturing people, and a sounder judgment on all social problems.

THE RESULTS OF EXPERIENCE.

The managers of the school are abundantly confirmed in their views, as set forth in the prospectus two years ago, by the experience of the school during its first year and a half.

From the first the school has been well patronized, and vacant seats have been few. At times every seat has been filled. The school was opened with sixty seats, all for a single class.

The entire number of students enrolled during the first year was sixty-four. The number of seats was increased to one hundred during the last summer. The number of students enrolled thus far this year is one hundred and two, of whom forty-two were members of the school last year.

The zeal and enthusiasm of the students has been developed to a most gratifying extent, extending into all the departments of work. The variety afforded by the daily programme has had the moral and intellectual effect

expected, and an unusual degree of sober earnestness has been shown. Success in drawing or shop-work has often had the effect of arousing the ambition in mathematics and history, and *vice versa*.

Progress in the two subjects, drawing and shop-work (and we had little previous knowledge of what could be done with boys as young as those of the first-year class), has been quite remarkable. To be sure, there was no doubt of the final result; but the progress has been more rapid than it seemed reasonable to expect. The second-year class contains already several excellent draughtsmen, and not a few pattern-makers of accuracy and skill. The habit of working from drawings and to nice measurements has given the students a confidence in themselves altogether new. This is shown in the readiness with which they undertake the execution of small commissions in behalf of the school, or for the students of other departments. In fact, the increased usefulness of our students is making itself felt at home, and in several instances the result has been the offer of business positions too tempting to be rejected. This drawback, if it can be called one, the school must always suffer. The better educated and trained our students become, the stronger will be the temptations offered to them outside, and the more difficult it will be for us to hold them through the course. Parents and guardians should avoid the bad policy of injuring the prospects of a promising son or ward, by grasping a small present pecuniary advantage, at the cost of far greater rewards in the future.

Success of the Russian Plan. — In another important respect our expectations have been more than realized; namely, in our ability to introduce class methods in giving instruction in the theory and use of tools. All divisions in the shops have thus far been limited to twenty pupils; and, as a rule, all members of a division have just the same work.

The exercises have been two hours long, though often the students have asked for longer work. It is but due to the pupils of the school to say that they have uniformly seconded all efforts looking towards good order and good manners. No little surprise has been expressed by visitors, at seeing how quietly and independently twenty boys can work for a couple of hours in the same room. Though all classes handle keen-edged tools, no serious accident has happened, and very rarely have small injuries been received.

There are three schools in France which I had the pleasure of visiting in 1878, which will prove instructive. — First,

THE ÉCOLE COMMUNALE, RUE TOURNEFORT, PARIS.

This is an elementary school containing between two and three hundred pupils ranging in age from eight or nine to fourteen or fifteen years of age. The prescribed course is three years; and, besides the studies suitable to the age of such

pupils, three points will attract our attention: first, the free-hand drawing, which is excellent, showing the best of teaching; second, modelling in clay, and duplicating the best specimens in plaster; and, third, shop-work in wood and the metals, taken by about fifty of the older pupils. The modelling would have been considered remarkable, for a much older class of pupils; and I saw nothing to compare with it, either in design or execution, outside of the special art schools. The facilities for shop instruction in the working of wood and metals were less complete, the shops being fitted to teach but few at a time. The mechanic art method is strictly followed, the samples used being those presumably best adapted to teach principles and processes, and having no marketable value, on the ground that articles made for sale cannot be so well adapted for systematic and progressive instruction. All commercial considerations are, on principle, scrupulously avoided. For two years the pupil has practice in the different shops; but in the third his shop instruction is confined to some specialty. I was both delighted and instructed by my visit; and left recognizing in M. Laubier, the genial head of the school, a man whose ample knowledge was quickened by a genuine enthusiasm and love of his work.

THE ÉCOLE MUNICIPALE D'APPRENTIS, BOULEVARD DE LA VILLETTE, PARIS.

This is one of the best examples of a trade-school modified by the mechanic art idea. The course of instruction is three years. In January, 1873, it had seventeen pupils, and now numbers over two hundred. The principal feature of the school is its large and well-appointed machine-shops, arranged for manufacturing purposes. The aim of the school is to turn out good workmen. During the first year the student works, two weeks at a time, in the various shops, after which he devotes himself to a particular specialty; that is, he learns the trade of a machinist, a carpenter, a joiner, a pattern-maker, a founder, or a blacksmith, in much the same way that an apprentice in any well-appointed establishment would learn the same specialty. As there are only three foremen, it is obvious that the amount of instruction given to each student must be very small.

The time, from seven A.M. to half-past two P.M., is divided as follows : from seven to eight, study ; from eight to eleven, shop-work ; from eleven to twelve, breakfast, recreation, and gymnastics ; from twelve to half-past twelve, shop-work ; from half-past two to three, recess and lunch.

Scheme of Study and Work from 3 to 7 P.M.

Day.	Year.	3 to 4.	4 to 5.	5 to 6.	6 to 7.
MONDAY.	1st.	Study.	Geometry.	French.	Geometry.
	2d.	Geometry.	Study.	Geometry.	English.
	3d.	Workshop.	Workshop.	Drawing.	Law.
TUESDAY.	1st.	Drawing.	Drawing.	Study.	English.
	2d.	Study of Tools.	Study.	Algebra.	Hist. and Geog.
	3d.	Workshop.	Workshop.	Mechanics.	{ Descriptive Geometry.
WEDNESDAY	1st.	History.	Chemistry.	French.	Geometry.
	2d.	Drawing.	Drawing.	Geometry.	Physics.
	3d.	Workshop.	Workshop.	Drawing.	Sketching.
THURSDAY.	1st.	Reading.	Geography.	Arithmetic.	English.
	2d.	French.	Chemistry.	English.	Arithmetic.
	3d.	Workshop.	Workshop.	{ Physics and Chemistry. }	Technology.
FRIDAY.	1st.	Drawing.	Drawing.	French.	Geometry.
	2d.	Mechanics.	Book-keeping.	Geometry.	Study.
	3d.	Workshop.	Workshop.	Mechanics.	Sketching.
SATURDAY.	1st.	Study of Tools.	Arithmetic.	Physics.	Study.
	2d.	Drawing.	Drawing.	French.	Study.
	3d.	Workshop.	Workshop.	Drawing.	{ Sketching and Drawing.

It will be seen from the above that for the first two years the mornings are devoted to shop-work, and the afternoons to other studies ; that for the third year the shop-work continues till five P.M., and the time from five to seven is devoted to other subjects. The amount of shop-work accords with the aim of the school to make good workmen.

THE ÉCOLE D'APPRENTIS

AT CHALONS-SUR-MARNE, FRANCE.

This old and famous school well deserves its high reputation, as one of the best appointed and thorough trade-schools in

Europe. It is literally a school in a large manufacturing establishment, where manual skill and technical knowledge of some special trade is the main object, but supplemented by drawing and such other studies as a skilled mechanic needs. Its aim is to make foremen, constructors, and directors of works, rather than engineers or ordinary workmen. The apprentice-school on Boulevard de la Villette, Paris, is an almost exact model of that at Chalons, but not of so high a grade. The Chalons scheme of studies and shop-work is so similar, that a more detailed statement is unnecessary. Its students are older; the shops have a larger number of foremen to direct the work of the students, and a more complete equipment. In its shop instruction it has in later years conformed more nearly to mechanic art methods, particularly in the earlier part of the course.

THE ROYAL AGRICULTURAL AND FORESTRY ACADEMY

AT HOHENHEIM, WÜRTTEMBERG, GERMANY.

Hohenheim was once a ducal summer palace. It is two hours by post from Stuttgart, about thirteen hundred feet above the sea, and nearly five hundred feet above the valley of Stuttgart. The old palace, with its turrets and pinnacles, its courts and quadrangles, and its once white walls, now gray and hoary with age, all in strong contrast with the emerald green of early spring which surrounded it at the time of my visit, made a picture not soon to fade from the memory. The little hamlet of Hohenheim contained, in 1875, including students, about three hundred inhabitants and thirty families. The palace contains a hundred and twenty rooms for students, besides ample space for all the purposes of the school.

The general studies include the elementary mathematics, with trigonometry and descriptive geometry, physics and chemistry, and the natural sciences which apply in farming, fruit and forest culture, and the raising and training domestic animals. The practical studies include the history and literature of farming, farm productions in general, with special practical instruction relating to the culture of hops, grapes, fruits, and vegetables, the breeding, rearing, diseases, and uses of domestic animals, the production of wool and silk, and bee-culture, farm

management, with practice in the drawing of plans and specifications for such management, and farm book-keeping: farming technology taught through practice. There is a corresponding practical course for forestry. The farm contains 971½ German acres, or about 780 of ours, devoted as follows: arable land, about 613 acres; meadows, 161; hop-garden, 4; practice-field, 28; farm-practice station with practice-fields, 6; practice-garden for forestry, 1; rented pieces of ground, 14; exercise-field, 2; fruit-tree culture-ground, 17; vegetable garden, 6; botanic garden, 15; mulberry plantation, ½; vineyard, ½; constant pasture, 22; roads, fish-pond, and commons, 51; wild forest-tree plantation, 13; yards and building-space, 17; and cemetery, ½ of an acre. There are, besides, about fifty-five hundred acres of hunting-forest in Hohenheim, in charge of the professor of forestry, which are available to the students of this department. The collections include models of farm machines and tools, mostly natural size, forest productions and forest technology, the cabinets of mineralogy, botany, zoölogy, and physics, the veterinary arts and horse-shoeing, wools, soils, and composts; the library of ten thousand volumes; the workshops for brandy distillation, for beer brewing, for beet-sugar manufacture, with conveniences for the preparation of starch, mustard, and vinegar. There is also a station for testing seeds, a meteorological station, and a silk-reeling station. There is also a manufactory of farm machinery and tools, employing from thirty to thirty-six men, two or three of whom devote themselves to making models.

This is a strictly special and practical professional school, and all the theoretical and applied instruction is so given as to educate the student toward and for his profession, and not away from it. While educating the student to a love of nature may not be one of the special aims of the school, it is difficult to conceive that a young man can spend two or three of his most susceptible years in such charming relations to nature, and not become her admirer and devoted servant for life. But the love of nature is strong in the German character; and many more young Germans than Americans, under the same circumstances, would voluntarily choose a profession the practice of which would be a constant source of gratification and pleasure.

There is also in Hohenheim, under the direction and supervision of the Bureau of Agriculture, a

FARM SCHOOL,

the aim of which is to fit young men, especially peasants, by means of suitable practical teaching and practice in the fields connected with the school, to cultivate in a superior manner their own ground, as well as to train good land-tenants and overseers. The head master or principal of the school, besides the general direction, must give the theoretical instruction, except the doctoring of animals. He must be able to give instruction in the simplest operations of land-measuring. In field-work the pupils are in charge of an inspector or field-master, who carefully instructs them in the current farm-work of the season. The master having charge of all the farm tools and implements teaches the pupils how to use the horses and cattle devoted to farm-work, with their feeding and care. Forgetfulness, want of care, or cruel treatment of the animals must be brought to the attention of the board of directors. The school is fitted for twenty-five pupils, the course of instruction being three years. In the summer a few special pupils are admitted, who wish to practise some special branch. These must pay three florins per month for board and instruction. The regular students pay for board and instruction by their labor. They must furnish their own clothing, and pay for washing.

Conditions of Admission.—Pupils enter the school in October. Each applicant must be over seventeen years of age, and must bring a certificate from parent or guardian, or his baptismal certificate, and agree to remain three years and do the required work. He must be perfectly well and strong, so as to bear the fatigue of the necessary work, be able to read, write, and cipher, and must possess some knowledge of the use of agricultural tools.

The Instruction.—The head master gives four lessons per week, except during some periods of pressing work. Besides, in winter and on rainy days after supper, pupils must work out examples, or occupy themselves with other profitable study. But the work is so arranged that the course of in-door instruction can be completed in the three years. The hours of work, including instruction and the time devoted to the care of the working cattle, are ten hours per day in spring, summer, and autumn, and seven to eight hours per day in winter. In the summer, during harvest time, if work is pressing, one to two

hours per day are added. Besides board and tuition, the school furnishes the pupil with a warm room, which he uses as a dining and study room, a bedroom, and a sick-room when ill, and also the ordinary drink, light, books, bed, sheets, towels, etc. For poor pupils the Bureau of Agriculture also provides clothing out of a small fund for this purpose.

The studies are divided into six sections, one for each half-year of the course. In this way pupils may enter at the beginning of any section, and complete the course in the following three years.

Principal Studies. — 1. Climate, with geography; soils, with references to origin, to chemistry, and physics; manuring. 2. General plant-cultivation, with references to botany; working the soil, and the use of the implements; seeds and their care; the harvest; elementary principles in succession of crops. 3. Special cultivation of plants; meadows; fruit-trees; grapes; the products of ploughed land in particular. 4. General breeding of animals, with reference to zoölogy, and the required food; special, — cattle, horses, swine, bees. 5. Breeding of sheep; the farming profession; the improvement of the products from whey, flax, wine, and fruit manufactures. 6. Upon the fitting up and carrying on small farms, and better methods of cultivation; computations relating to income and expenses; farm buildings and land management.

Auxiliary Studies. — 1. German language (only in the winter half-year); (*a*) for the first class, exercises in easy subjects, as receipts, keeping of accounts, bills of lading, bills of exchange, etc.; (*b*) for the second class, keeping of accounts, contracts, etc.; (*c*) for the third class, compositions on agricultural subjects, oral statements, etc. 2. Arithmetic: (*a*) for the first class (both summer and winter half-year), the four rules in whole numbers and fractions; decimals; proportion; square root; mental exercises; (*b*) for the second class, profit and loss, interest, cube root, etc.; (*c*) for the third class, reduction, arithmetical progression. 3. Geometry: (*a*) first class, explanation of the elements, lines, angles, plane figures, circles, the three dimensions of objects, drawing, in summer, land-measuring; (*b*) for the second class (winter half-year), the more difficult propositions, surface computation, machine-drawing, in summer leveling and land-measuring; (*c*) for the third class (in winter half), computation of cubic contents, plan-drawing; in summer, prac-

tice in measuring solids and surfaces, freehand drawing. The instruction in animal doctoring is given in the three winter half-years, and divided as follows: 1. Internal and external diseases, with particular reference to the epidemic diseases, and means of prevention. 2. Medicines, simple operations, as bleeding, etc. 3. Exterior diseases, shoeing, principal wants, etc.

The lectures upon general physics are also divided in the winter half-years into the three following parts: 1. Simple rules of mechanics; 2. Heat, light, and explanations of the relating phenomena; 3. Electricity, with corresponding explanations.

PRACTICAL STUDIES.

I. *Field-Work*. — (a) Double teams. Pupils of the first and second years are taught to work with oxen, and the second and third year with horses. Pupils in their last half-year have charge of certain portions of the work. Common ploughing, harrowing, rolling, etc., are practised to such an extent during the three years, that the pupil can answer any demands made upon him. Practice in the use of the cultivator, drill-machine, and other implements not given in the first year, is had in the second and third, under the special instruction of the farm overseer. (b) Hand-work, manuring. This occupies the pupils when not busy with the teams, and includes loading and spreading it, especially upon the potato-fields. (bb) The sowing of gypsum by pupils of the first year; (cc) the sowing of different seeds, special study of the soil in connection therewith, in the second year. In the third year the pupils do the sowing themselves. (dd) Harvesting (reaping, mowing, binding, etc.) is done by the students and such day-laborers as are needed. (ee) The second and third year pupils are taught the rotting of flax and hemp.

II. *Work on Meadow-Land*. — (a) laying out of ditches; (b) irrigation; (c) work on drainage, the laying out of sewers and drains; (d) facing the water-banks; (e) work at hay and harvesting. In all this work the pupils take part, those of the third year usually acting as overseers.

III. *Fruit-Tree Culture* is taught by lectures and inspection, but the work is done by the pupils of the gardening and pomological school.

IV. *Work in the Hop-Garden* is done by the pupils of the first and second year, mainly under the direction of those of the third.

V. *Barn-Work*. — The threshing and cleaning of the various grains is done by the pupils when there is no other work on hand.

VI. *Working the Soil in Orchards* is given to the pupils in turn. The third-year pupils have practice in measuring and boxing fruits.

VII. *Work with Cattle*. — (a) Feeding oxen in summer, in winter; (b) milking cows; (c) care and rearing of calves; (d) care of fattening cattle. The pupils of the first and second year do the work *a b c* in turn. The weighing of fattened cattle is done by the older students.

(e) The opportunity is given the pupils to become acquainted with the care of bees.

VIII. *Manufacture of Agricultural Tools*. — Pupils who are qualified, and desire it, can spend some time in winter in the manufactory in Hohenheim.

IX. *Various Work*. — In general, the work of greasing the wagons, and making small repairs, is done by the upper servants; but the pupils must also learn from time to time how to do this work. The third-year pupils have charge of the harness-room, under the general oversight of the overseer. Pupils are also taught how to make straw-rope.

I have given full details in regard to this school, because I think that there are classes in our own country to be educated, to which such a school is particularly adapted. If I do not mistake, those interested in the Indian problem will find this example of especial value.

With one more example which interested me very much, and which may some time find an application in our own country, I close the list.

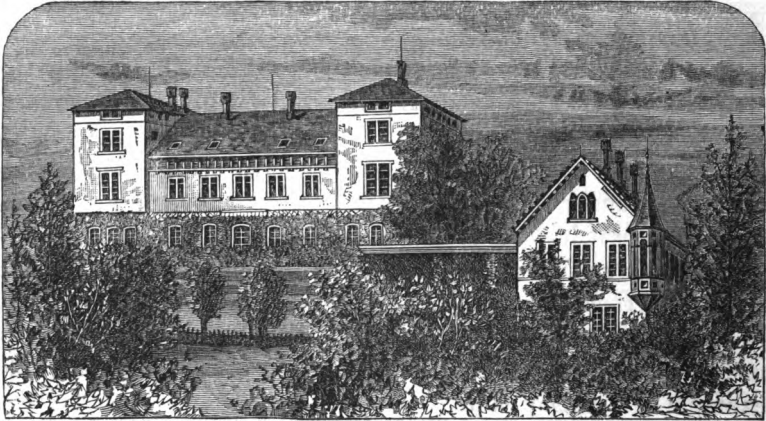
THE POMOLOGICAL AND HORTICULTURAL SCHOOL

IN REUTLINGEN, WÜRTTEMBERG.

This school was founded in 1860 by Dr. Edward Lucas, formerly Royal Garden Inspector and Director of the Horticultural School in Hohenheim. Up to 1880 it had educated over one thousand pupils, many of whom occupy important positions, and are materially aiding in elevating the science and practice

of pomology and horticulture in Germany. The sole aim of the school is to advance these sciences, and educate specialists. The buildings, besides apartments for four families, accommodate forty-five pupils.

The school-grounds comprise, in all, sixteen hectares, — nine in Reutlingen, and seven in Unter-Lennigen, — where there is a branch department of lower grade for poorer pupils, who study, mainly, hop, grapevine, and meadow culture. It will not be necessary to go into any detail in regard to studies, or division of time between theory and practice. It will be sufficient to note that the hours for instruction are in summer from five to seven, and in winter from six to eight, mornings, from eleven to twelve, noon, and from six to seven, evenings; the remainder of the time being devoted to out-door practice. The younger



THE POMOLOGICAL AND HORTICULTURAL SCHOOL IN REUTLINGEN, GERMANY.

students, who are studying horticulture, usually work one hour per day more than students in the higher departments. In the three-years course in fruit and garden culture, the entire cost to each student is five hundred and thirty marks for the first year, four hundred and ten for the second, and three hundred for the third; in the second and third years an allowance being made for labor. In the higher three-years course in pomology and garden construction, the entire cost for the first year is six hundred marks; in the second, five hundred; and in the third, four hundred; allowance being made for labor as above.

This is a school of higher grade than the farm-school in Hohenheim, but so similar in all the details of management, that any further description is unnecessary.

The decay of the system of apprenticeship has raised the question how skilled labor is to be provided in the future. This question is now agitating all countries having any industries to foster or extend. In our own country the more extended and varied use of machinery has caused the more rapid decay of the system, and if we except, perhaps, England, no country stands to-day in such urgent need of a remedy or substitute. In the early days in our own country, when our system of public education was still in its infancy, mental and manual education were much more intimately connected than at the present day. The industries of the country were still in a crude state; agriculture and a few only of the more necessary mechanic trades having any existence. These trades demanded but little artistic taste, and not the highest manual skill. The master became responsible, in an important sense, for the mental and moral well-being of the apprentice, besides teaching him the manual of his trade, with such knowledge of the theory and such experience as he was able to impart. By his attendance, for three or four months of each year during his apprenticeship, upon the district school, the mental culture of the apprentice was not entirely discontinued; and thus, by alternating between the school and the shop, his mental and manual education were never entirely divorced, but each in an important sense aided the other.

As time passed, a more marked separation between mental and manual education began to take place. The schools gradually improved. Better methods of teaching and a larger number of subjects were introduced, and a higher standard set, all demanding more time from the pupil. But quite as marked a change was going on in the industries. Increased demand led to competition, to the invention of special tools to cheapen production, to a greater subdivision of labor, and to the concentration of the individual upon a very narrow range of work. Thus the apprenticeship system for learning a trade in its old and best form has passed away, never to return. As it exists to-day it is an advantage to neither party. The apprentice can only learn a narrow specialty, so narrow, as a rule, that its only value to him is the meagre pittance which he can earn from day to day, but at the sacrifice of any further educational advantages; while the master finds it for his interest to pay for the skill he needs, rather than put into his carefully adjusted chain

of operations a weak and nearly useless link. In this way the school and the shop have become so widely separated, that they are no longer mutual helps, as in past times, in developing the highest capacity or the highest manhood. The student who enters the shop at fifteen for a three or four years' apprenticeship seldom returns to the school; and, on the other hand, the student who completes his high-school course at eighteen seldom willingly enters the shop as an apprentice, with the intention of becoming a skilled mechanic, and earning a livelihood by manual labor. His twelve or fourteen years of mental school-work, whether highly successful or not, have, through habit, if in no other way, unfitted him for all manual work, even if he has not in many ways been taught to despise such labor.

In England, says Professor Silvanus P. Thompson, in "Contemporary Review" for September, 1880,—

"Time was when, for the most part, the skilled artisan who was the master of his trade worked at home in his own house, assisted, it might be, by a few younger workmen or journeymen. Into his house and family he would receive one or two young lads to learn, during a seven-years' engagement, the art and mystery of his craft; the master himself working and teaching them his work, feeding and clothing them, and receiving from them in return the value of the services which, as they became more apt in their work, they were able to render. The advantages of thorough training by the continuous care of the master were unquestionably proven by the universal adoption of the system. The ancient guilds grew and acquired their legal status upon this usage as their very foundation, and a seven-years' apprenticeship formed the one necessary qualification for the possession of the right to exercise the following of any occupation or employment, art or craft, recognized among the handicrafts of the time. With the extension of trade and the wider use of machinery the number and power of the adult employed workmen increased, and with their increase of power came a jealousy, on the one hand, toward the masters; and, on the other, toward the apprentices, who were regarded as cheapening labor when employed in too great numbers. The conflict which arose between employer and employed gradually merged into one between capital and labor. By dint of strikes the workmen at last prevailed, and, in attempting to bring about a limitation in the amount of apprenticeship labor, brought about a result of quite another kind, and one far more disastrous than the evil sought to be remedied,—the destruction of all the best and most important features of apprenticeship."

On the Continent the same changes, though less rapidly, are taking place. There is less concentration, and the various trades are still largely in the hands of individuals and families,

and handed down to sons or others to whom they have been taught through the old system of apprenticeship. In Germany the young mechanic, in many instances, still finishes his education by two or three years of *journeymanship*, which enables him to gain further knowledge and experience in his trade, and see something of the world before settling down to his life's work. But the change is gradually taking place in all countries, and all are preparing to meet it through some form of education. England, as is well known, has, during the past twenty-five years, by the introduction of a general system of elementary education, including drawing, and through special technical schools and museums, revolutionized many of her industries, particularly those involving artistic taste in design as well as excellence in manufacture.

But in practical education in the mechanic arts, so far as I am aware, nothing has been done in England. In this direction France has long taken the lead, and has in the last few years awakened anew to the importance of the subject. The introduction of the mechanic art method of teaching, and the influence which this method is having in modifying the details of instruction in the various trade-schools, constitutes a new era in technical education in France.

It is well understood that Germany still produces skilled mechanics, especially wood and metal workers, many of whom find their way to England and this country. But this is not due to the introduction of any system of manual education in this direction. When the older polytechnic schools, such as those at Karlsruhe and Stuttgart, were established, shop instruction constituted a part of their educational scheme; but it soon fell into disuse for want of some plan by which alone success could have been made possible; and the result is that the influence of all the German polytechnic schools is opposed to such education by any method. Even the trade-school at Augsburg, which ranked for many years with that at Chalons-sur-Marne in France, both in its methods and aims, has for some reason been discontinued. But apprenticeship still prevails, in connection with a thorough public education in schools more or less adapted to the needs of classes of students. Drawing and the elements of the sciences are taught to a large extent in view of their uses in industrial pursuits; various special schools exist for the education of artisans, such as the excellent

Gewerbe-Schule of Stuttgart; but the manual skill must be gained in the practice of the trade, and not in the school.

Austria is quite as rapidly, if not more so than any other country, substituting systematic mechanic art instruction in place of the old apprenticeship system; and, if she shall adhere to her present course, it is not difficult to foresee that in a few years she will rank among the leading industrial countries of Europe.

In the foregoing I have included such schools as seemed to teach a special lesson in regard to the introduction of the manual element as part of a system of education. In addition to the remarks already made in connection with each, I wish simply to say in conclusion, that with but few pupils, so few that each can receive special instruction, a lack of system, or any system, may not be entirely fatal to some degree of success, any more than it would be to teach general, qualitative, and quantitative chemistry in the same laboratory; but no one would expect to get the best results. For large classes, on the other hand, special shops arranged for class-teaching become imperative. In the next place it is pretty generally admitted that, if only a general mechanic art training is desired, then shops arranged with this end in view are better than any manufacturing shops can be, whether considered on educational or economic grounds. Again, even in schools where manufacturing shops are part of the apparatus of instruction, it is becoming more apparent that a certain amount of preliminary or mechanic art training is necessary in order that the double aim of the shops, instruction and manufacturing, may both meet with reasonable success. While there may be special reasons, such as the expectations of the public, or the belief that no valuable teaching can be done except through manufacturing, why this department of instruction should demand greater opportunities for application in the school than other subjects or departments of engineering, I am persuaded that the manufacturing element will gradually diminish even in schools where it already exists, both on the grounds of economy, and because a mechanic art training will in general be found to better prepare the student to choose wisely, besides opening to him a broader career for the future.

We sometimes see a formal argument made to prove the obvious proposition that an educated man makes a better mechanic

than an uneducated one; and it is hence inferred that our public-school system, in many ways so admirable, and the result of so many years of labor and experience, is all that can be desired, and that any suggestion of a modification which may the better adapt it to the future needs of the large proportion whose education is finished even in the grammar schools, is in the nature of an attack upon the system. But this is by no means the case. The quality of the education may be of the very best; and yet the question may be asked, whether an education based mainly upon scholastic studies, with so much drawing and science as time will allow, is the best course for the largest number of pupils. It is sometimes thought that the reason why so many graduates of high schools seek positions as clerks, book-keepers, and other light forms of labor, is because these positions are thought more genteel than pursuits involving manual labor. This may be true to some extent; but I apprehend that quite as frequently the graduate asks himself, What can I do? what has my education fitted me to do? There is but one answer, and he acts accordingly as he ought; for, even if he wished to follow some trade or industrial pursuit needing special technical knowledge, he may not be able to devote the time and money necessary even if the conditions of apprenticeship were favorable. Suppose now that the same student had the opportunity during his school course, say till eighteen years of age, to go through a well-arranged series of mechanic art shops under competent instructors: what are the chances that upon graduation he would not enter upon that pursuit for which he felt himself best fitted, and which held out the best prospects, not only for the pressing present, but for the future? That a course of education forms habits as well as tastes, is obvious; and it is unreasonable to expect that pupils educated almost exclusively through one set of closely allied subjects should show a partiality for pursuits with which these subjects have only the most remote, if any, connection.

American boys and girls are not peculiar in this respect. The same tendency is noted and complained of abroad, when, in fact, it ought to be expected. What, then, is to be done? Will any thing short of educating the hands and head together answer? It might if manufacturing establishments would take young men after they leave school, and educate them in the quickest and best way. But this we are not to expect so long as it is

hardly more for their interest to take them into the shop and teach them handicraft, than into the drawing-room to teach them drawing. In short, the time has come when if a young man wishes to follow a certain course he must so far qualify himself as to be of use to his employer, and thus to himself; and, as the State cannot afford not to educate its children, it cannot afford not to so educate them as to make them the most serviceable to the State as producers and citizens.

But how can this be done at the least expense, and with the least change in our present public-school system? Obviously by utilizing our present educational facilities to the fullest extent, and not by pulling down in the hopes of building something better upon the ruins. It is also obvious that cities need this change more than the country, where almost every child is daily accustomed to some kind of manual labor on the farm or in the shop.

In the city two courses are open,—either to build up an independent mechanic art school, or to attach a series of shops or laboratories to the high school. If the intention is to specialize this education, then an independent mechanic art school would best accomplish the purpose, and at the same time most probably more or less injure the high school by drawing away some of its pupils. If, on the other hand, it is thought that a proper manual element should enter into the education of all, then the shops would be attached to the high school, and serve to strengthen it by attracting students who now do not see any gain in the high-school course unless they have the college or some other particular end in view. Admitting that two three-hour lessons per week for the four years would be as much time as would be needed for shop instruction, then a series of eight shops arranged to teach twenty-five in a section would accommodate twelve hundred pupils. It is plain that only the laboratory method would make it possible to teach this large number of pupils, and one such series of shops would be ample for a good-sized city.

JOHN D. RUNKLE.

INSTITUTE OF TECHNOLOGY,
BOSTON, Feb. 13, 1882.

B.

**REPORT OF GEORGE A. WALTON,
AGENT OF THE BOARD; INCLUDING A REPORT OF INSPEC-
TION OF SCHOOLS IN BRISTOL COUNTY.**

REPORT.

TO THE BOARD OF EDUCATION, — My work during the past year has been, as heretofore, of a miscellaneous character. It has consisted, (1) of visits to the towns, to confer with school committees, to address the people and teachers, to inspect the schools, and to arrange for teachers' institutes; (2) of attendance upon conventions of teachers and school officers, to assist in their deliberations; (3) of attendance upon teachers' institutes, to illustrate methods of teaching. In several instances the presence of an agent of the Board has been requested to advise where differences of opinion have arisen between committees and people; such service has been most cheerfully rendered. I have delivered during the past year fewer public addresses than during any previous year since my appointment as agent of the Board; less time also has been spent in actual teaching in the schools; a larger proportion of the time spent in the schools has been given to inspection. Of the nature of the inspection, something will be said farther on.

In a large number of the smaller districts, and in some large communities, it is true, improved methods of teaching encounter opposition from the prejudices of the people; but in general it may be assumed that the people demand methods in advance of what are practised, as well as results above what the schools afford: the stimulation of the teachers and committees is, therefore, a special need of the present time. The teachers' and committees' associations present the best occasions for doing this needful work. I have been present at many of the associations held during the year, and in most have taken some part. It is interesting to note from year to year the progress in the matter and methods of these meetings. The most hopeful signs of this progress in the teachers' associa-

tions are the part taken by the teachers of largest experience, the thoughtful care with which they prepare for the exercises, and especially the interest commonly felt in the discussion of the philosophy of education.

The associations of school committees have existed for but a brief period of time; but they have entered in a most vigorous manner into the discussion of topics of vital interest to the schools. Good types of the meetings of these associations were the last two held by the Association of Southern Worcester, which includes the towns of the Blackstone Valley south of the city of Worcester. Reference is made to the very last in the report on the teachers' institutes, found in the report of the Secretary of the Board.

TEACHERS' INSTITUTES.

A full report of the teachers' institutes also will be found in the report of the Secretary. Of these there have been held during the year twenty-one. I assisted in the instruction and conduct of all, and arranged for one-half of them. At no time within my knowledge of the institutes have they been better adapted to effect the teaching of the schools, and at no time have they been more fully appreciated. They have been directed to a few specific ends, the principal of which are the illustration of methods of teaching, and the inculcation of some principles upon which all teaching depends; the several teachers, all directing their lessons to these ends, have given greater unity, and so greater effectiveness, to the institute instruction as a whole. In the modified form of the past few years, the institute work has an indefinite field of usefulness in the future.

INSPECTION.

In the inspection of the schools, my special field during the past year was the schools in Bristol County. While this was my special field, calls outside the county have so far engrossed my time that I have been unable to visit all or even a majority of the schools. I have within a recent period, however, visited a portion of them, in each of seventeen out of the nineteen cities and towns in the county: the two that remain are towns that may be classed with those upon which I shall hereafter report.

Late in the winter, a plan of inspection for both Mr. Hubbard

and myself was agreed upon ; this we were to apply with such modifications as we deemed wise, each in our respective fields of inspection. The plan embraced the following particulars :—

I. School-buildings, including site and grounds ; size of rooms ; lighting, heating, and ventilation ; furniture ; and out-buildings, including location, construction, drainage, and use.

II. Studies, including course of studies (branches) ; means of teaching, as apparatus, libraries, and reference-books.

III. Results, including reading, silent and oral ; alphabet, with elementary sounds ; spelling, oral and written ; language ; geography ; numbers and arithmetic, etc.

IV. Teachers and teaching ; methods of teaching ; physical training ; moral instruction.

The schools which were visited before this plan was adopted embraced a part of those in eight of the cities and towns. Visits to these were made not only for the purpose of inspection, but also for the purpose of teaching in the schools, and addressing the teachers and people.

In Bristol County there are three cities that have all the facilities for making good schools : the population is large and compact, the valuation is high, a large percentage of the teachers have had professional training or considerable experience, and each city has a salaried superintendent who devotes his entire time to the supervision of the schools. With these cities may be classed two towns that rank next in wealth and population : one is badly hampered by the district system ; otherwise these two towns have excellent means for having the best schools. Rejecting these cities and towns, the remaining fourteen towns may properly be classed together for a comparison of results. The plan of inspection above referred to was applied in the schools of seven of these towns. The tests in examination were essentially alike, and the entire inspection was made with reference to the same particulars.

SCHOOLHOUSES.

Most of the schoolhouses in Bristol County appear to have been built since the time of Horace Mann. In architecture and construction they generally express the severe economy which in early times characterized all our public buildings ; now, as then, perhaps, in many instances a necessity. These modern structures are of ample size, of good proportions, and are gen-

erally neat and commodious buildings. Some display considerable taste, and are a credit alike to the neighborhood and to the advancing spirit of the age.

We still meet, however, in these towns with some stern relics of an ungarnished age, in the houses of a hundred years ago; built where and as they now stand, flush with the road, upon lots too scant to admit, without trespass, of a wood-shed or other out-building.

Location and Surroundings.—New schoolhouses are generally located at or near the centre of the school population; except in some notable instances of change in the population, most visited during the past year appear to be well situated to accommodate the pupils. In some cases the sites of the houses are unfortunate from their surroundings: they are in bleak, exposed, or in low and damp places. To avoid swampy exhalations, stagnating pools, cold, springy soils, to secure a suitable exposure to sunlight and pure air, a few rods of travel would be an inconsiderable sacrifice. In some districts every thing else seems to have been sacrificed to a central location.

After the house is built, the care of the district or town too often ceases; the grading and surroundings are, in the country towns, left to time and the elements. I recall but few school-sites which present outward attractions to compare with the least-adorned of private dwellings in the same locality. Why should not trees and shrubs surround these nurseries of culture and refinement? Every thing that adorns, also cultivates and refines.

The Schoolroom.—If we enter the schoolroom we shall find that the same plainness characterizes that, as marks the outside of the building. Most rooms present a tidy appearance, but there is little to captivate the sense or satisfy the taste. Windows are uncurtained, walls unhung with paper, or pictures, or adornments of any kind. Some rooms have all that good taste can demand in the way of finish. In a few are paper-hangings or painted walls; house-plants grace the windows; mottoes, and other ornamental devices, other parts of the room.

Most of the schoolhouses have but a single room. Many of them were built when, for some cause, the population was greater, families were larger. The rooms are consequently of ample size; they frequently have space for two or three times the present number of pupils. Yet within the year I have

visited five schoolrooms, not all in Bristol County, whose space per child does not in either case reach one hundred and thirty cubic feet, scarcely one-half the amount required for health. I spent nearly an hour with thirty-eight children and a teacher, forty persons in all, in a recitation-room which measured twenty-nine by thirteen feet, and ten feet in height, — ninety-five cubic feet for each person. Compare what I suffered in one brief hour in this unventilated room, with what the children are subjected to, who are confined to this room for alternate hours of the entire school day, from week to week, and what less can you say than that here is “cruelty to young children,” in compensation for which the learning they get is of slight importance? But, if it be cruelty to these, it must be worse than cruelty to the young teacher to subject her to such conditions for the entire school year.

Lighting and Heating.— The lighting of most of the country schoolhouses is upon three sides, and so is abundant; care in such cases is not often taken to shade the windows directly in front of pupils or teacher.

The heating in most is by stoves, and usually is also abundant. Many of the stoves, however, are placed directly between the desk of the teacher and his pupils, thus exposing him and a portion of them to undue heat, and as the stove is often quite high it becomes a serious annoyance to the teacher in overlooking his school. In such cases the stove or the teacher’s desk should be removed to one corner of the room.

It is worthy of note that many of the schoolrooms in this part of the State have the stove in an anteroom, which may be separated from the main room by a sliding gate extending from the floor to the ceiling. This room is reached by doors from the side entries, and is made accessible to the children on reaching the school in the morning, and at the noon intermission. The heat is freely admitted to the schoolroom between the slats of the gate, while the children are confined during the absence of the teacher to this anteroom. The advantages of this device are as obvious as the device is simple and ingenious.

Ventilation.— In some of the schoolhouses, the cracks and crannies make ample provision for ventilation. In most, the means of ventilation is through open doors and windows, or through cracks and pores in the building material. Where

ventilating flues exist, either from faulty construction, or from want of skill in their use, they prove generally ineffective. So the problem of ventilation even for the country schoolhouse is yet unsolved.

Furniture.—The seats and desks of most of the schools are of the modern patterns; to a great extent they are properly adjusted to the occupants; the tendency in seating is to graduate the seats by the pupil's rank in scholarship rather than by his ability to reach the desk or touch the floor. In one school I found foot-rests provided for the smaller pupils. Much would be gained in many schools if single desks could supplant the double desk now in such general use. The same result is virtually attained in schools having but half the seats occupied, the teacher in such cases giving to each pupil the whole of the double desk. To give to the desk the necessary width for writing, in the primary schools of one of the cities, the top of the grammar-school desk was used with the standard of the primary-school desk.

The blackboard may be reckoned a part of the furniture of the schoolroom; its extent, its quality, its location, all indicate the measure of intelligence on school matters, of building committees. I have found no room in Bristol County without a blackboard of some kind; many are deficient in quantity, more have boards of poor quality, and in a large number the boards are not properly located. For the special use of the teacher in teaching, there should be a good blackboard at a point accessible to the teacher, and in sight of every pupil in the room. In this particular, my note-book indicates deficiency in a large number of schoolrooms in the county.

The common crayon is now so very cheap that chalk in the lump is no longer found in any schoolhouse visited in this part of the State. The same, however, cannot be said of the eraser for cleaning the boards, and of the index for pointing. The latter is quite often wanting, while for the former I am sometimes served with a dusty cloth, or even with a piece of paper. The schools of the entire town in some instances are without clocks, and in most without thermometers. Such articles of furniture as have been specified above are essentials in the outfit of the schoolroom. How some of these may be supplied, will be suggested under the head of Apparatus.

Out-buildings.—The out-buildings connected with the school-

buildings deserve a separate paragraph. In connection with more than one-half the schools, where is enjoined upon the instructors of youth the teaching of all the virtues which adorn the character, filth and impurity in one building neutralize the efforts made to commend the virtues in the other. And, what makes the abuse of these buildings seem worse, in quite a number of instances noted, but one building is provided for both boys and girls.

In nothing is the contrast in the moral obligation felt by the teacher more evident than in the care or neglect of these buildings. While so many are a shame and disgrace to decent society, others are kept in perfect order, have all the cleanliness of similar structures at our homes. That decency and purity prevail in connection with some, shows that they may in all.

It would not seem a necessity in rural districts that the school-yard should be enclosed with a fence; but the demand for some seclusion in the use of the out-buildings, in mixed schools (and all ours are such), makes it desirable that the yard should be in some way properly screened. In one town having a large number of schools, every school-yard was enclosed, and separated by a division fence, and generally the out-buildings were screened.

What I have now said relates to the moral bearing of the out-buildings. They hold an important relation to the sanitary condition of the schools; many of these buildings, even where they are not so situated or abused as to be unfit for use, can be used in storm, rain, and cold only by exposure to inclement weather; and in the warm season there is often danger from offensive and poisonous odors. There is every reason to believe that diphtheria and typhoid fever, the former of which is often epidemic among our school-children, result from bad air, to which sometimes for hours they are exposed.

STUDIES AND RESULTS.

The studies to which I have directed special attention in the examination of the schools are reading, writing, geography, and arithmetic, with all that these branches now generally include, as spelling, composition, penmanship, etc. In most of the schools the teachers and children determine the order of topics for study in these branches, and, in general, the whole plan of study. Hence, as the change in teachers is a constant factor, the course

of studies is a variable and indeterminate quantity. In but one of the towns have I found a course of studies any thing like as explicit as is found in all the cities.

Reading.—In many of the schools the pupils' reading was from lessons they had previously read. In general they read also from books which I furnished; the pieces being of a lower grade, usually, than those in which they were accustomed to read. Considering the large amount of time given to reading, the results are not all that ought to be obtained; and yet in this branch the pupils rank higher than in some others.

In oral reading the defects in mechanical execution were a want of good position of body and book, bad articulation, a want of fluency, and especially of force. The most general excellence was the attention given to correct pronunciation. The errors in expression were a want of proper modulation of the voice, and power to awaken thoughts and feelings in the minds of others.

The principal means for forming a judgment of the ability of the pupils to read silently was their reading, off-hand, of a piece they had not before read. In many of the schools the pupils were fully taxed, merely to call the words, and this was often done with great hesitation: the sentences did not appear to awaken thoughts in the minds of the pupils. With some pupils and classes the sentences evidently occasioned thoughts before they were uttered: this clearly showed that the pupils had the ability to read silently. The schools that had had considerable supplementary reading, generally read with ease and intelligence.

In all grades the pupils, with rare exceptions, are attempting to read matter beyond their comprehension. In one town, with the exception of a single class, this was a universal fault. By the common method of teaching, the mind is not directed to the thought: the exercise consists almost wholly in calling words. When the pupils have learned to call these in one school-reader they are given a higher; and so in many of the schools, though low in other branches, they are nearly all reading in the higher grades of readers.

Language.—Several different exercises were employed to test the pupils in the use of language, written and oral. Of the oral tests, one consisted in questioning the pupils upon some lesson they had prepared to read, or had just read; another consisted

in having the pupils tell in their own language a story contained in their reading-book, or in naming and describing objects or scenes represented in a picture. The results were various. Some classes, and one or two pupils in many classes, used language fluently, and with accuracy; but the larger number talked with difficulty, and, while they gave respectful attention to the exercise, were reserved in their manner, and apparently uttered their thoughts without deriving pleasure from the exercise.

The tests for written language were of several kinds: they included the last of the above, the pupils writing instead of speaking. One consisted in writing, in their own language, a story from memory, after having read it over carefully; another consisted in describing, in writing, a simple act which I performed in the presence of the pupils. The exercises were dictated to different grades of pupils; they were performed with varying degrees of success by different schools, and by different pupils of the same school. The story referred to was written by the older grade of pupils.

Besides testing them in silent reading, this exercise showed their habits of thought and expression, their neatness in arranging, their penmanship, spelling, syllabication, use of capitals, and marks of punctuation. In thought and arrangement, but few schools, as a whole, could be considered good, while of many individual pupils they were excellent. Most erred in grammatical construction, all had some errors in spelling, many in the use of capitals and punctuation; but few used quotation-marks with the quotation which occurred in the story. There were many words divided at the ends of lines in disregard of syllabication.

In one exercise, written in a neat hand by a girl of thirteen years, a capital was used at the commencement of every line; in another, nearly every word was commenced in the same way.

Letters, also, to imaginary persons, were written in some of the schools, and with results similar to those stated above. The very creditable character of an occasional exercise indicated much practice, and specially good teaching.

I have not tabulated the results of either of the above exercises, but below are given the percentages obtained from two grades of pupils who wrote the following from

Dictation.

Where did your cousins buy their new cloaks? At Mr. Smith's, I think, and they buy their sugar there too.

There were ten chances for errors in spelling, and five each in capitals and punctuation. The exercise was written upon papers by all classes from Third Reader grade upward to the highest in the schools, all but two pupils being over nine years of age. The two classes of pupils were formed by placing together all the papers written by pupils from nine to twelve years of age for the younger, and all written by pupils above twelve years of age for the older. The average age of the younger class is ten and one-half years, of the older thirteen and one-half years.

Though the results do not actually include the work of all the schools or of all the class of towns under consideration, they include a number sufficient to be taken as fairly representing the average. The following are the results in general, and in the particulars of spelling, capitals, and punctuation: —

	Spelling.	Capitals.	Punctuation.	Total Average.
Taking all the schools, the percentage of correct answers was as follows: —				
For older class (average age, 13½ years)	65	68	32	
For younger class (average age, 10½ years)	52	52	16	
Both classes (average age, 12½ years)	58	60	24	
Total				48
Taking all the schools of any town, the highest percentage correct was, —				
For older class	75	84	58	
For younger class	70	71	23	
The lowest percentage correct was, —				
For older class	54	51	18	
For younger class	34	42	4	
Taking any single school, including both classes, the highest percentage correct was	76	95	60	
The lowest percentage correct was	24	40	3	

The results of this exercise in particulars show that the pupils do not learn to spell by writing the words they will want to use

in writing; that they have a limited knowledge of the use of capital letters; and that most are extremely negligent, if not wholly untrained, in the use of marks of punctuation.

Spelling.—Of the spelling it may be said that it would have been better had the words been spelt orally. This seems a poor satisfaction, since no demand is made upon anybody to spell words in this way. Full half the errors were made in spelling the words *where, buy, their, there, and too*. And these common words are those which the teacher does not think to give out in oral spelling, especially to older pupils. A word in the possessive case is seldom assigned to be spelt orally; yet more than ninety per cent of all the pupils failed in the spelling of "*Smith's*" in the above sentence. Far too much attention is given to oral, and far too little to written, spelling, in all grades of the schools.

The name of the teacher, which was required to be written upon each paper, was often misspelt. One pupil eleven years old, in, as his paper showed, a "grammer school," wrote: "Whair did your cusons by thary new clower to mister smiths I think and thay bort thair suger thair to." The twelve pupils in one school spelt the word "grammar" in six different ways: four, "grammar;" three, "grammer;" two, "gramer;" and one each "granmar," "gramma," and "grama."

Capitals.—In the use of capitals, since the exercise was so generally commenced with a capital, especially by the older class, it is probable that the second sentence would also have been, except as all punctuation was so generally omitted. Many pupils, older and younger, wrote "mister," some "misster," for "Mr.;" but the most striking error, and it was very common, was the use of a small *i* for the pronoun "*I*."

Punctuation.—The largest percentage of errors, however, was in the punctuation of the exercise. The commas needed to set off "*I think*" were used by only one in fifty of the pupils; these were the exceptional ones, whose papers otherwise indicated careful training. The omission of the interrogation-point was universal in many schools; so was that of the period in the abbreviation "Mr." The only mark which would lead one to infer that any attention is given to punctuation in a majority of the schools was the period at the end of the exercise. About half the pupils had this. In very few indeed was the punctuation entirely correct: in many there was none whatever.

From the general result the inference must be that the pupils have but little practice in sentence-writing. The appearance of the papers indicates that in no school visited is there enough of this work done, that in but few is it a regular and frequent exercise, and that in nearly all it is only an occasional and formal one, and then is rarely or never attempted with pupils below the Third Reader grade.

To some extent language-lessons are taking the place of the drill in grammar formerly attempted with young pupils. In few schools that I observed has it yet resulted in the familiar and easy use of good English, which all our children ought to be taught certainly before the study of grammar is begun.

Penmanship.—The penmanship in the schools visited has, in general, one excellence,—the writing can be read; the other requisites of a good handwriting are wanting. There are very carefully written, and neatly kept, writing-books. I was shown some finely executed specimens in some schools. The practice is much too largely confined to the copy-books and these fine specimens; there are few easy writers. In some of the schools where the copy-books were very fair, the pupils spent ten or fifteen minutes in writing upon the papers their name and age, with the names of the town and teacher. In but few schools did even the older pupils combine elegance with despatch in their written exercises.

The children are not much habituated to writing till they reach their ninth year. The first three or four years, perhaps the most important years for learning the forms of letters, are thus, so far as this branch of study is concerned, thrown away. In several schools there were children eight or nine years old who could not write their own names.

With the increased practice now had by many of the classes in written exercises, we may hope for more practical results in the future.

Geography.—The following is the list of exercises prepared as tests in geography:—

1. Draw a map of Massachusetts, locate and name four principal rivers (not branches). Locate Boston, Springfield, New Bedford, Nantucket, and your own town. Indicate with a cross the place of the highest land in the State.
2. Name three leading industrial pursuits of the State of Massachusetts; giving first that which you think produces the most wealth.

3. Where in the United States can we obtain coal ? iron ? copper ? gold ? silver ? lead ?
4. Name three large gulfs or bays on the coast of the United States, and with each an important river that flows into it.
5. Name the zone through which the equator passes, and give its width in degrees.
6. Name the highest mountains in Europe; also three rivers that rise in or near them, and tell into what body of water each river flows.

Some of the teachers, on seeing the questions, doubted the ability of their pupils to answer creditably these questions; in such cases, as the time spent in most schools was too short to examine in all the studies, the arithmetic or language work was given instead.

The examination in geography was taken by the grammar and high schools of several towns, and by classes of grammar grade in a number of mixed schools. The highest rank of any school was fifty-four per cent. The comparatively poor results—for such they seem—can be accounted for in part by the fact that but few of the schools ever, and most never, have written exercises in geography. Probably this was the first test of the kind ever applied to many of the pupils; again, in many schools map-drawing is not a common exercise: in one of the larger towns I found no one in which it was practised. In none was the map of Massachusetts drawn with a fair degree of accuracy: in general it had a rectangular form, but in some instances the shorter dimensions were from east to west. The answers to the second, third, and fourth exercises were quite satisfactory. The greatest inaccuracies occurred in answering the first and fifth.

The results indicate a want of accurate knowledge of geography, and the absence of the best methods of acquiring the knowledge. In a few schools the recitations were topical, and from maps drawn by the pupils for the purpose of recitation. In none of the lower grades did I find any systematic instruction in form, position, distance, direction, etc., which are preliminary to the study of geography.

Arithmetic.—The arithmetic was assigned to pupils of two grades,—to those from nine to twelve years old, which constituted the younger class; and to those twelve years old and upwards, which constituted the older class. The average age of the younger was ten and one-half years, and of the older fourteen and one-half years.

The tests submitted to the younger class were an example in column addition, consisting of eight items, each having three orders of units, some simple combinations, as 9 and 8, 35 less 7, etc., also the following problem : —

A boy spent 9 cents for a whistle, 8 cents for a top, and then had money enough left to buy 2 bunches of fire-crackers at 4 cents a bunch : how much money had he at first?

For these young pupils the exercises were dictated, and then written upon the board, so that every opportunity was given for writing the numbers correctly. Taking all the classes, the percentages of correct answers ranged from sixteen to eighty-four. The results, even the poorest, did not surprise me : they might those who have not applied similar tests. Something is to be allowed for the form in which the pupils are required to express their knowledge : these tests required them to express it in writing ; the results in combinations would have been considerably higher if the answers had been oral. Of course the column addition was in the customary form, and in this the rank was low. In this, as in other branches, the pupils did not readily take the sense of what was dictated. The teaching of arithmetic in this grade is not sufficiently directed to things required for the higher grades of work, and for practical life.

The list of problems submitted to the older pupils was as follows : —

1. Find the average age of twelve persons whose ages are as follows : —

9 years 8 months.				16 years 7 months.			
10	"	9	"	7	"	11	"
14	"	7	"	18	"	8	"
19	"	2	"	17	"	6	"
16	"	8	"	8	"	9	"
17	"	8	"	10	"	6	"

2. If it requires 804 men working 12 days to build a road, how many men would it require working 9 days to do the same?

3. How many cups of coffee, each containing $\frac{3}{4}$ of a gill, in one gallon of coffee?

4. What interest should be paid on a note of \$287.50 from May 15 to the 9th of the following June, the rate being 5%?

5. How many inches on both sides of a slate 1 foot long and 6 inches wide?

6. Find the cost at 90 cents per square yard of a concrete walk on the front and side of a corner lot of land, the front of the lot being 8 rods long and the side 10 rods, the walk being outside of these measurements and 9 feet wide.

These problems were presented to each of the pupils upon a card, in the form above given.

The percentages of correct answers in this grade, the average age being fourteen and one-half years, ranged from zero to sixty-seven. On the whole the percentages were low. In arithmetic, as in geography, reasons exist why this result might be expected. The pupils are not often tested with "written examinations," nor frequently with any: hence they do not readily interpret the language of new problems. For example, in most schools there were some who did not know what was meant by "average age" in the first problem. After the explanation was given, the majority of the pupils obtained the correct answer. What was meant by "both sides" of the slate in the fifth problem, could not have been understood, since very few answers were correct, and a large number gave for the answer thirty-six inches. The analysis of problems is not familiar enough to be practically applied. The second problem was without exception, I think, done by proportion; the answer to the third problem showed that a large number of pupils multiplied by two-thirds instead of dividing. The processes used were mechanical; thus, in the fourth problem, in finding the time "from May 15 to the 9th of the following June," nearly every pupil put down:—

MO.	DA.
6	9
5	15;

many the year also, and then found the difference of time by compound subtraction; all who did this obtained twenty-four days for the time; and all except five or six pupils, and these in one school, found the time in that way. Several put down 1881, and some other year, as 1880, and obtained an additional year. The very few who were careful to make a diagram for the sixth problem were almost the only ones who obtained a correct answer. I do not know how wide is the range of answers to this problem; I noticed one was \$19,602.06, another \$5,335,882.20. The latter was given by a pupil who had seventy-five per cent of his answers correct.

In all the schools (no exceptions were noted) there is too much dependence upon the book, and too little practice upon problems dictated from other sources. The moment the pupils are set to do work outside of the book, or to make a problem from data of

their own, they are adrift. In almost all they depend upon one another; in several schools the comparison of answers among the pupils was so universal as greatly to interrupt the work, and as entirely to vitiate the results. Were more practice given upon problems outside the book, and good habits established among the pupils, much better results could in a short time be secured. Where independence among the pupils was observed, there the best results were obtained.

GENERAL CONCLUSIONS.

The schools in their present condition justify the fullest confidence; what they demand is greater vigilance in their supervision. No one test, or form of examination, will reveal their real work. None but the most intimate relations with them, and with the teachers, can discover their true merits. But, with all that can be claimed for them, it would be unwise, and it would be untrue, to assert that they have not many defects. The few simple tests which were applied show that in the amount of knowledge, and in mental discipline, the rank of the pupils is far too low. To admit the defects, and try to point out the causes, may be a step towards finding a remedy.

Teachers. — First, the teachers employed are largely without either professional training or experience; fewer than one in seven being normal graduates, while some are very young, wholly untrained, and now for the first time “trying their hand” at teaching. Of the latter class, I found a bright girl of sixteen, in charge of an important primary school; the school was well kept, but little was taught. With her marked ability, and the training of a normal school, this young person would at once become an excellent teacher: now the poor children are being sacrificed, that she may get her poor experience. That the results are so good as they are, shows that the persons employed to teach have tact and ability, or that the tests applied are too simple.

Again, a serious evil is the frequent change of teachers: full one-third of the teachers were keeping their first term in the particular school in which I found them; a large number had been too short a time in the school to be responsible for its results. It would seem that the policy of some towns is to change for the sake of the change. Indeed, one school-committee man enunciated his doctrine of the tenure of office, by saying

that the teacher should float out at high tide. If he had said *would* instead of *should*, the proposition would be generally true. Whether the doctrine prevails or not in our towns, the changes are frequent, and attended with most disastrous consequences to the schools.

Teaching.—Under such a system of employing teachers, there cannot be, and there is not, much teaching. Little is done in very many schools to occasion the right activity in the mind of the pupil. In his hand is placed a book, which he pores over and tries to commit. The book is a collection of words that are often signs of nothing he has known or can conceive. Among these meaningless signs he is sometimes left to grope till the result is stultification.

As an illustration of the traditional modes of teaching which still exist, the method of teaching reading by first teaching the alphabet may be instanced: this is found in more than one-half the schools. In some the little children are still brought up, one at a time, to point out these meaningless signs, and call their names. How common it is, I cannot say, but I have seen children called in the same way to give in order the digit names, one, two, three, etc., as a first step in numbers.

Number of Classes.—A general fault in the mixed schools is the great number of classes. A case may be cited, which, though extreme, well illustrates this evil. To a method proposed for teaching some particular thing, a teacher objected that he had too many classes for such a method. "How many classes have you?" I asked. "Thirty in the forenoon," was his reply. "And as many more in the afternoon?" I said, inquiringly. "Not quite so many," he replied. "Fifty, do you think, during the day?"—"Oh, yes, as many as that certainly," he said. What can be expected but rote work in a school with fifty classes? Yet to have twenty or more is not uncommon.

Apparatus.—I have spoken in an earlier part of this report of the furniture. Some furniture is a necessity: the pupils must have chairs and desks; the room must have a stove. But the entire absence of apparatus of all kinds except occasionally some wall-maps, and here and there a globe or numeral frame, is a marked feature of our district schools. With the ingenuity which characterizes some teachers, all necessary aids for teaching find their way into the schoolroom: they contrive and con-

struct apparatus from cheap materials at hand. Instances have occurred where, without a dollar's expense to the town, the teacher has furnished all needed appliances for illustrating every topic he had to teach. There is much to hope for from such a teacher.

In very many of the schools the young pupils are not properly supplied with slates and pencils: there is consequently much idleness among this class, and great weariness often results. Some towns furnish these to all the children, from a general fund. I have found but few reference-books in all the schools: the little apparent demand for them is a serious reflection upon our methods and aims. A few committees have exercised their right to control the town's portion of the school fund, and have appropriated a part of that to the purchase of books of reference. With the evils enumerated, — and they are a small part of what could be named, — the wonder is that the schools accomplish so much.

Government, etc. — It was contemplated in my inspection of the schools, that their form of government should be observed, also their physical and moral training. The pupils in the schools in general have no systematic physical training. The stooping forms and awkward carriage, especially among the boys, show how much it is needed. In two schools I saw practice in calisthenics. The training received was mental as well as physical.

The order of the schools is generally good, and seems not to be prompted by fear of corporal punishment. Instances have come under my observation where the order is secured by an appeal to low motives, as ranking and marks; others, where flattery is employed by the teacher. In general, the reason and conscience are not sufficiently exercised. On the whole, the schools are largely controlled by arbitrary rules: these are repressive in their influence; the child is forbidden to do this or that. The rules are not discriminating: for minor and graver offences, about the same penalty is attached; the pupil, without other guide than the penalty, would think the dropping of a slate as great an offence as lying, whispering as stealing. The order seems to exist for the school and the teacher, not for the child. The school government is not, so largely as it should be, self-government.

In some of the schools recently visited, I have been particular

to inquire what moral instruction is given. A single teacher was found who had set times for talking with his pupils of the habits they were forming, of the effect these habits have upon character, of the kind of actions that tend to give happiness and form good character, and so on. Here was a systematic course of instruction in morals in a grammar school. But, with the exception of the incidental and silent tuition going on wherever a truly conscientious nature exists in the teacher, no teaching of morals is attempted. While this is a fair statement, and while it indicates that occasions are not made for giving moral instruction, and that the subject does not present itself to the teacher as a primary object of the school, it is true that as a class the teachers are themselves highly moral, and do continually exert a decided moral influence.

There are schools in which a desire for knowledge and a love of truth actuate the pupils. The atmosphere of the school-room is one of honesty. There seem to be as much purity in the hearts of the boys and girls, and as much love and respect for one another and for the teacher, as exist in the best homes among the members of the family. I should be most happy to accept the invitation to "come again," which was kindly subscribed to some of the papers returned from such a school in Bristol County.

It has already been distinctly stated that the tabulated results from which my inferences are drawn are of the examinations made in the less populous and less wealthy towns of the county. These towns have a just pride in their schools; for the liberal support they give them, considering their means, most are to be commended. The majority tax themselves above the average of the State; some are below, and the schools suffer in consequence. Money is a potent means for improving the schools. Let all the towns apply twenty-five per cent more to the wages of teachers, and expend the money in securing and retaining the best the market affords, and the schools could be made one-fourth better. But with this, provision must be made for more and better supervision, — supervision which implies a more careful selection of teachers, with no end in view but to get and keep the best; it implies a more careful classification of the schools, the preparation of definite courses of studies, frequent examinations, oral and written, for all grades, and the demand for the most approved methods of teaching. Till all this

is secured, and much more, the children will continue to be deprived of that education to which they have as just a claim as they have to the food that nourishes their bodies, or the air and sunlight which help to make them strong and healthy.

My inspection has included a number of the schools in each of the other towns, and in the three cities. Only to a limited extent, however, have I submitted any exercises as tests in either.

Of the schools of the cities and of one of the towns, — with those of the other, I am less familiar, — I know enough to state with confidence that in their supervision, in their methods and results, they compare favorably with the best schools in the Commonwealth.

Respectfully submitted.

GEORGE A. WALTON.

Boston, Jan. 1, 1882.

C.

EXAMINATION OF SCHOOLS IN HAMPDEN
AND FRANKLIN COUNTIES.

BY

E. A. HUBBARD, AGENT OF THE BOARD.

REPORT.

To the Board of Education.

GENTLEMEN, — My time the last year has been given principally to the schools in Hampden and in Franklin Counties, and to teachers' institutes. The first two months, or until the close of the winter term, were given to Hampden. From minutes made at the time, I find that I made seventy visits to schools; that these sometimes included all the schools in the town, sometimes but a few of them: but I did not visit one-half the towns of the county. My purpose was not so much to examine, to observe, to note and report, as to aid the teachers by hints, by suggestions, by questions to the pupils, by advice when it was sought, and by words of encouragement. Of course I could not fail to observe the methods of teaching, the discipline, the general appearance of the schools, and the results obtained; but the primary object was to assist the teachers in the work given them to do. Generally one or more members of the school committees accompanied me, introducing me to the teachers and to the schools, and rendering me all needed assistance.

The summer term, beginning in most towns in April or May at the request of Secretary Dickinson, was devoted to the schools of Franklin County. Here the purpose was not so much to render aid as, with the approval of the school committees of the several towns, to examine, to note, to compare results, and to report. It was thought that such an examination would be of interest to the committees, and subserve the general purposes for which the schools were established. It was intended that I should visit every town, and, indeed, every school, in the county; but a full year would not be sufficient for such an examination, and for tabulating the results. I

visited not more than one-half of the towns, and in but very few of those was I able to find my way into all the schools. The questions to be asked, and the information sought, were partly general, and pertained to the towns, to the school system, to the school committees, and to the teachers, and partly particular, having reference to individual schools, school-buildings, and the progress of pupils. The questions were not prepared by myself.

Those pertaining to the town were for its population, its valuation, the occupation of the people, the appropriation for schools; the school system, town or district; and the public sentiment toward the schools, as that sentiment was shown in the appropriations, in visits, and in a general interest.

Those pertaining to schools were to the kind of school, graded or ungraded, in village or country; the number of schools; the number of pupils in each, and the average number of each; the means used, if any, for equalizing the numbers; and to the high school.

Those pertaining to the school committees were for their number; their mode of examining teachers, of examining schools; the frequency of their visits to the schools; their meetings of teachers, and the results.

The inquiries with reference to particular schools pertained to the site of the building, on ground high or low, moist or dry soil; to the school-yard, its size, its condition; to the out-buildings, their convenience and condition; to the material of the schoolhouse, whether brick or wood; to the size and height of rooms, to their furniture, their light and heat and ventilation; to the supply of blackboards, maps, globes, books of reference, and objects for oral teaching; to the teachers, whether they had had professional training or experience, or both; to their method of teaching, the oral or written, or both; and to the course of studies they were following.

The examination of pupils was not intended to embrace all grades of schools, or all the pupils in the ungraded schools, but to determine about what is accomplished in the first four or five years of the child's school life; also what in the next four or five years. It sought to test the knowledge of a class about ready to leave the primary or intermediate grade for the grammar, and of a class ready to leave the grammar school for the high school. It was assumed that the ages of the one class

would be from nine to eleven years, and of the other from thirteen to fifteen years. The examination was therefore limited to classes of about those ages, and included reading, writing, spelling, geography, arithmetic, and language. As the examination was in writing, it embraced punctuation, the use of capitals, the division of words into syllables, and the general appearance of the exercise.

I entered upon this work early in April. The school committees welcomed me to their schools, sometimes accompanying me at a great sacrifice of their time and convenience, and sometimes simply giving to the teachers notice of my coming. The teachers also, without exception, received me cordially, though in rare instances I thought with a little fear lest another, possibly a better, way of doing some things might be suggested. I very soon saw that the examination could not be made a means of comparing the schools of one town with those of another. This arose partly from the fact that there was not time to give to the several schools precisely the same examination. The term was ten or twelve weeks in length, there were more than two hundred and fifty schools in the county, and those in the same town were often so remote from one another that only three could be visited in a day, to say nothing of examining them. Besides this, the circumstances of towns side by side are so different, that any comparison of the schools would do injustice to one or both of them. Indeed, the circumstances in different parts of the same town are sometimes so unlike as to prevent any just comparison. I have found two schools in the same town, called by the same name, high or grammar, as the case might be, — one in a village a hundred years old, with no foreign population, with an established order of things; and the other in a manufacturing village hardly a hundred months old, where a majority of the people were foreigners, where the mass of the children were not only of foreign parentage, but were themselves foreign born, who heard no word of English spoken in their homes, and who, when they came to school, could not speak or understand a word of English. With the rapid growth of the village, and the great demand for operatives for the mills, children enough for a school are brought in in a single day; but a schoolhouse, be the town ever so ready and willing, — a schoolhouse cannot be built in a day. Accordingly, I found two teachers occupying

halls, not built for school purposes, each with twice as many pupils as teachers ought to have, most of them of the class above referred to, each struggling under difficulties that seemed well-nigh insurmountable. What justice can there be in comparing the schools in the one village with those in the other? In their own town the reasons for the differences would be understood; but such a comparison between different towns would be misleading.

I was also convinced that in many instances the examination furnished me no proper means of estimating the value of a teacher's work. Again and again it was said to me, especially if the questions were not well answered, "I am not responsible for the ignorance of these children: I have been with them but a week;" and occasionally, though not as frequently, when the results were better, "I am not to have the credit for this: I have been in the school but a few days." This state of things seems to be inseparable from the country schools; for these frequent changes will exist so long as better teachers can find more remunerative positions, and poor teachers, and persons without experience, can be found to take the places made vacant.

Moreover, no comparison of the efficiency of the different boards of school committees will be just and reasonable that does not take into account the peculiar circumstances of each. We find one board in a village, each member in the immediate vicinity of every other. They can, without trouble, come together to discuss matters pertaining to their schools. Some of them are professional men. Ten or fifteen teachers are within call, and it is easy for the school committee to confer with them, gain information relative to their schools, and receive suggestions. But another board is in a farming town, the members themselves farmers. They are each two or three miles from any other, and the same distance from all the schools save the one in the district in which each lives. They serve, not because they think themselves qualified, but because they belong to one of the two great classes into which some one has divided society, — the one composed of those "who will serve on committees" because "somebody must," rather than to that other class "who will not serve on committees" because "somebody will." They are men of good intellects, faithful and conscientious, and they seek to do, and do, the best they can; but what the one board can do with ease, the other does with difficulty.

The examination, then, can do little more than give a general idea of the condition of the schools examined; and whether that condition is satisfactory or unsatisfactory, whether those responsible for it ought to be praised or censured, must be determined by the circumstances.

Statistics taken from the Tables found in the Report of the Board of Education, 1881.

The population of the county (census of 1880)	36,000
valuation in 1881	\$15,808,509 00
appropriation for schools (raised by taxation)	\$60,303 02
number of persons between five and fifteen years, May 1, 1880	6,458
number of schools	251
aggregate attendance, that is, the entire enrolment	7,157
average membership	5,018
per cent of attendance	.89

The supervision of the schools is by the school committee, and at an expense of \$2,383.20, an average of less than \$9.50 for each school, of \$0.369 for each person in the enumeration, and of \$0.424 for each person of the average membership. The principal occupations are agriculture and manufactures. The public sentiment toward the schools is reported good, as the people are generally willing to vote what appropriation the committees ask, but does not show itself in frequent visits to the schools.

SCHOOLHOUSES.

The schoolhouses in the villages are comparatively new, well located, and well furnished. The rooms are large, high-studded, heated by stoves or furnaces, furnished with means of ventilation more or less successful, with a good supply of blackboards, and with some helps of the nature of maps, globes, numeral frames, and books of reference. As these buildings are designed to accommodate several schools or classes, the rooms are not always supplied with a sufficient amount of sunshine, nor, indeed, always with sufficient light. Generally, however, the arrangements are good, and well adapted to school purposes. The houses are large enough, unless, it may be, in some manufacturing village, where the school committee with their best laid plans, and the people with a readiness to do whatever is required, cannot keep abreast with the increase of population.

There is another class of houses, built a generation or two

ago, which have been kept in such repair that they are comely and comfortable for school purposes. They were built for the district schools, when the pupils in the winter term numbered from fifty to seventy, and in the summer two-thirds of that number. However much too small they may have been for the schools then, they are large enough now, when the district that can furnish one-third or one-half the former number is fortunate and exceptional. The walls have been newly plastered, or are covered with paper; the windows with their small panes have given place to more cheerful ones; and the marks of the master's "raps official" upon his desk to keep his school in order, or upon the window-sash to call in his romping boys and girls, are obliterated; and the "jack-knife's carved initial" is "lost to sight," though "to memory dear," by the introduction of new furniture. These houses have some blackboards, but not so many as are desirable, and other helps are very few. There are no special means of ventilation; but with windows upon three sides of the room, admitting more or less fresh air, there is little annoyance from the lack of it.

There is a third class of houses, built so long ago that the "memory of man runneth not thereto," whose furniture, inconvenient and unsuitable at first, remains unchanged for the better, and whose appearance is in every respect disheartening. Nothing indicates advancement save what may be found in the improved methods of the teacher; and it is difficult to keep a progressive teacher in a house in such a condition and with such surroundings. There are not many such houses (at least I did not see many such); but almost every town I visited had one, — some, more than one. In these there is nothing to invite pupils, or to encourage teachers; and it is difficult to understand how parents living in comfortable homes, and loving their children, can consent that for six hours a day and five days a week, for twenty-five or thirty weeks in the year, those children shall be subject to such influences.

GROUND AND OUT-BUILDINGS.

In many instances there are no grounds enclosed about even the better buildings, the first class mentioned. The buildings are upon the ground, it is true; but they have no grounds. There are no trees; there is no shrubbery, no ornamentation of any kind. There is nothing to please the taste, nothing to

cultivate it, nothing to suggest it. If any thing can be called the playground, it is simply the region in the vicinity of the schoolhouse. There are some exceptions; but the absence of grounds enclosed was noticeable.

But the second and third classes spoken of—the old district schoolhouses—can have no enclosures. They stand beside the highway, upon a knoll, or in an angle, or near where cross-roads meet. The road is the playground, and that may not be enclosed. The children, few in number, do not mind this: they take kindly to school and to play, and are not very fastidious.

The out-buildings, in a majority of cases, I think, are in a very bad condition. Without locks and keys, they are of necessity open to the public. Teachers cannot be held responsible for their condition unless they can control them, and even then it is a difficult matter. It is more easily done when a janitor is employed, or where there is at least one gentleman among the teachers; but it can be done, for it has been, where there are only ladies. The school committees, or truant officers, or some official, can aid the teachers greatly, if they will keep in mind, that, as “the way to resume specie payments was to resume,” so the way to keep these buildings in order is to keep them in order, and, if any thing wrong appears, to have it made right immediately. Some of these buildings are filthy to the last degree. No lady, or gentleman for that matter, would be willing to look into them, nor is it easy to understand how any parent can be willing that his son or daughter should step into them. Some of them are so closely connected with the school-room as to be offensive; some are not large enough for the number of pupils; often they are not sufficiently screened from public gaze, nor are the apartments for the boys and girls sufficiently separated. If I owe an apology to any for speaking upon this subject, it will be found in the condition of things.

Passing now from the exterior (the school-buildings and their surroundings) to the interior (the teachers and their pupils), I will speak first of the teachers, their professional training, their experience, and their permanency, and then of the examination of the two classes I proposed to examine.

TEACHERS.

Most of the teachers of the public schools of Franklin County are without professional training. From the tables making a

part of this report of the Board, it appears that only twenty-four of the teachers of the county are graduates from any of the normal schools of the State. This is only six and a half per cent: while in Hampden the graduates from the normal schools are fifteen per cent of the whole number of teachers; in Middlesex, twenty-one; in Plymouth, twenty-five; and in Suffolk more than one-half the female teachers are graduates. A greater effort is made in the county now than formerly to secure teachers from the normal schools; and I was pleased to learn that in some of the towns the school committees are in frequent communication with the principal of the school at Westfield, and are securing some of the best graduates, who are meeting with remarkable success. Other teachers have had a long, and to a greater or less extent a successful, experience; while some are keeping school without training, or experience, or knowledge. They are seeking to teach what they do not know, to explain what they do not understand, to guide when they do not know the way; and if the pupil can repeat the words of the book, or will assent to the statements of the teacher, the teacher is too often satisfied.

But, on the other hand, there are teachers who have a good education, who have had professional training, a long experience, and permanent places. They have tact, skill, and a love for the work, and their pupils are a credit to them; and both teachers and pupils are a blessing to the community. Such persons teach, not simply assign lessons and hear recitations; and their pupils have ideas and thoughts, and not simply the words by which thoughts are sometimes expressed.

EXAMINATIONS.

The class whose ages ranged from nine to eleven years were examined in reading, spelling, arithmetic, penmanship, and language. A selection from the Third Reader was given for the reading exercise. The result showed great differences in classes of the same grade in the same town, and great differences in pupils in the same class. Sometimes I found in a class of poor readers one or two exceptionally good ones; and, when I asked for an explanation, I was told that the exceptionally good reader attended Sunday school, and took books from the library, and read at home. The teacher did not mean that the child stood before her mother and read orally, but that she

read silently for her own pleasure and profit. If the classes in our schools read less orally, but more silently, books within their comprehension, would they not sooner become good readers? Would such a note as this which I find upon my note-book be made? "Reading was poor: only one in a class of more than twenty-five read well." Still some classes read well.

Eight words were given for spelling, not as words are ordinarily pronounced in a spelling exercise, but in sentences for the pupils to write. They were, "sugar, their, pleasant, whose, Wednesday, write, there, which;" and each sentence contained one or more of the words to be spelled, as, "I like maple-sugar;" "I will write next Wednesday;" "Their house is very pleasant."

The result showed about twenty-seven per cent of misspelled words,—the best, eleven per cent; the poorest, sixty; the others ranging between those extremes.

In arithmetic simple examples were given: as, "9 and 7 are how many? 27 and 8? 7 from 62? 9 times 6? 7 times 8? 9 in 72? 11 in 110? $\frac{1}{4}$ of 35? $\frac{1}{8}$ of 58?" and one problem, "A boy gave 9 cents for a whistle, 8 cents for a top, and then had money enough left to buy 2 bunches of fire-crackers at 4 cents a bunch: how much money had he at first?"

The result in arithmetic showed sixty-six per cent of correct answers,—the best, ninety-four per cent; the poorest, twenty-four.

For an exercise in language, a class was sometimes asked to reproduce the selection they had just read; but if they could not write well enough to do that, or if there was not time for it, they were asked to write this sentence: "Where did your cousins buy their new cloaks? At Mr. Smith's store, I think, and their handkerchiefs too." Some were asked to write letters. This exercise showed the pupils' penmanship, some good, some hardly legible; their knowledge of the rules for punctuation and for abbreviations, and this was very slight. Capitals were used promiscuously in sentences, and often not used where they should be. In one school, wherever the pronoun "I" began a sentence, the capital was used; but, when it occurred elsewhere in the sentences, the small form was used, and often joined with the next word, as "ithink." Very few expressed the possessive form of the noun correctly; and monosyllabic words were

divided, a part put at the end of one line, the rest at the beginning of the next, as, "cloa" at the end, "ks" at the beginning.

The general appearance of the papers showed that the pupils were not much accustomed to written exercises, and many of them undoubtedly would have appeared better in an oral examination; and yet the papers of some were very creditable.

The other class of pupils examined were those about ready to enter the high school, and their ages varied from thirteen to fifteen years. They were examined in reading, spelling, arithmetic, geography, penmanship, and language. For the reading a selection was made from the Fourth Reader. The reading was not good. In some instances it was difficult for a person listening to understand the story read, and this arose partly at least from the fact that those who read did not understand it. Some classes read much better than others, and individuals better than the class; but I did not find in this grade what seemed to me exceptionally good readers, as I did in the primary. Looking over the minutes of the reading made at the time, I find such as these: "poor," "very poor," "poor," "pretty good," "fair," "fair and in some instances good," confirming the impression made eight months ago, that the reading on the whole was not very satisfactory.

A list containing eight words was given for spelling. They were "principal, business, hire, perceive, fiery, inflammation, dictionary, and February." For their penmanship and language a story was given out to be read and reproduced, and the misspelled words found in their statement of it were also noted.

For convenience I will designate a few schools by letters.

A.—In this school twenty-five per cent of the words in the list were misspelled; but in the story several pupils had no errors, and the average was about two to a page of note-paper.

B.—Of the list, sixty per cent were misspelled, and in the story one error to three and a half lines of a Congress sheet.

C.—In this school the story occupied on the average a page and a half of note-paper to each pupil. On four of the papers there were no errors, on six others sixteen.

D.—Of the list, one-half the words were misspelled, and on a single page of note-paper one pupil fourteen years and eight months old misspelled forty-two words out of one hundred and forty-seven, or one out of three and a half used; while another pupil in the same school, two years younger, misspelled but one word upon two pages of the story.

E.—There were thirty-five per cent of errors in the words in the list, and in the story rather more than one to a page of note-paper.

F.—Nine out of sixteen pupils, when asked to write the name of their school, wrote "Grammer" school; and in the story one hundred and ten words were misspelled, averaging five to a page. These children were largely of foreign parentage.

G.—Of the list words, there were thirty-one per cent of errors; in the story, four upon a page.

H.—In a class of twenty-one, twenty misspelled the word "inflammation;" beside this there were only twelve errors. In the story there were but sixteen errors upon forty-two pages of note-paper; the papers of twelve pupils were free from misspelled words. The average age of this class was fourteen and one-half years.

I.—The class numbered eighteen, their average age less than thirteen years. Two had no errors in the list words, one misspelled all of them, two all but one, and the errors of the class reached forty-five per cent.

It will be noticed that in most cases a much larger per cent of errors appears in the words of the list, than in the re-writing of the story.

In arithmetic the following problems were given:—

1. Find the average age of twelve persons whose ages are as follows:—

9 years 8 months.				16 years 7 months.			
10	"	9	"	7	"	11	"
14	"	7	"	18	"	8	"
19	"	2	"	17	"	6	"
16	"	8	"	8	"	9	"
17	"	8	"	10	"	6	"

2. If it requires 804 men working 12 days to build a road, how many men would it require working 9 days to do the same?

3. How many cups of coffee, each containing $\frac{3}{4}$ of a gill, in one gallon of coffee?

4. What interest should be paid on a note of \$287.50 from May 15 to the 9th of the following June, the rate being 5%?

5. How many inches on both sides of a slate one foot long and six inches wide?

6. Find the cost at 90 cents per square yard of a concrete walk on the front and side of a corner lot of land, the front of the lot being 8 rods long and the side 10 rods, the walk being outside of these measurements and 9 feet wide.

The problems were none of them difficult ; and half of them — the second, third, and fifth — required but few figures. I will state results taken from my notes, designating each school by the same letter I used in the report of the spelling.

A. — Less than one-half of the problems were correctly solved.

B. — Only one pupil attempted to solve the six problems. Two pupils solved three correctly, another two, another one. Fourteen did not have any correct answers, and some left nothing upon their papers.

C. — One pupil had correct answers to four of the problems, two others each to three, two others each to one. Three other pupils had no correct answers. The class gave about twenty-five per cent of correct answers.

D. — Only a trifle more than one-third (thirty-five per cent) of the problems were correctly solved. The first one, which required an average to be found, was not attempted in this school, as it was not in some others, because the pupils did not know what was meant by an average, or how to find an average of several different numbers.

E. — Very poor. No pupil solved more than one problem correctly, and only three were solved by the class.

G. — Poor. Two pupils solved two each, six solved each one, and three solved none.

H. — Five pupils solved every problem, five others all but one, five others all but two, and six only half or less than half.

The result in arithmetic is by no means flattering. It has been said that arithmetic is better taught in our common schools than any other subject ; but, judging by this examination, we may hope that this is not true. Comparing the examination in this grade with that in the primary, that of the lower grade is the better. Examples were given there, problems here. Those required correct ciphering, these good reasoning and correct ciphering. Some of the work in the problems showed correct ciphering ; but the conception of what the nature of the problem required was so wide from the mark, that a correct answer was impossible. May it not be that our pupils are taught, or if not taught are allowed, to depend too much upon the rule, upon the subject found at the beginning of the section or upon the top of the page, forgetful of the fact that in an examination and in practical life they will find nothing outside of the problem to

aid them, that they must know from the nature of the problem itself what is required, or the problem must remain unsolved?

The following were the topics in geography submitted to the classes:—

1. Draw a map of Massachusetts, locate and name four principal rivers (not branches). Locate Boston, Springfield, New Bedford, Nantucket, and your own town. Indicate with a cross the place of the highest land in the State.
2. Name three leading industrial pursuits of the State of Massachusetts; giving first that which you think produces the most wealth.
3. Where in the United States can we obtain coal? iron? copper? gold? silver? lead?
4. Name three large gulfs or bays on the coast of the United States, and with each an important river that flows into it.
5. Name the zone through which the equator passes, and give its width in degrees.
6. Name the highest mountains in Europe; also three rivers that rise in or near them, and tell into what body of water each river flows.

The papers in geography indicated that in some of the schools map-drawing was not much practised, and consequently in those schools the map of Massachusetts was not well drawn. It was not asked or expected that a beautiful map would be drawn in the time allotted for the exercise, but one that should show a tolerably correct outline of the State, and one upon which a few points could be fixed. While in some of the schools the maps were quite well drawn, in others Plymouth, Bristol, and Barnstable Counties were represented to be in the same latitude with Hampden; and of course Cape Cod was carried far to the north, as far north as Boston or even Gloucester. New Bedford and Springfield were located in Berkshire County, and Nantucket a little north-east of Boston, or on the mainland in Worcester County. The second, third, and fourth questions were quite satisfactorily answered in many of the schools; but to the fifth the answers were various. The width of "the zone through which the equator passes" varied from $23\frac{1}{2}^{\circ}$ to 180° , and on some papers the equator passed through the North Temperate Zone, and in one through the North Temperate, South Temperate, and the Torrid Zones. In one school where the other papers were very good, and the paper in geography also with the exception of the answer to the fifth, most of the pupils appeared to have no basis for an opinion of the width of the zone, and did not venture to express one. It

seemed that they had learned the width without acquiring any knowledge of the zone; and so, having tried to remember and having forgotten, they now knew nothing about it.

LANGUAGE.

To test the ability of the pupils to take in the thoughts of another when expressed on the printed page, and to express those thoughts in English, to exhibit their penmanship, their spelling, their knowledge of the rules of punctuation, and of syllabication, the following story was given them to read and reproduce. It was printed upon a card, a copy given to each, and after a reasonable time the cards were collected, and the pupils wrote.

"In a field of wheat, ready for the sickle, there was a nest of young larks; and their mother, whenever she left the nest to go in search of food for them, charged them to listen with great attention to any words they might hear spoken by persons visiting the field. Accordingly, on her return one evening, her young ones told her that the farmer had been there with his son, and had said to the young man, 'This grain is quite ripe: go, call upon our neighbors and friends, and ask them to give us their help to-morrow in reaping the field.'—'Oh!' said the old lark, 'if that is all that was said, we need not leave our dwelling just yet; but mark well what the farmer says, if he comes again to-morrow.' Next day came, but no help came from anybody; and the farmer again going his rounds, and seeing that his friends were not to be depended on, said to his son, 'This grain ought to be cut without delay: go and ask your uncle and cousins to give us their assistance.' The little birds trembled as they told this to their mother, and begged her to seek a safer home for them. 'Nay, my children,' said she, 'sleep without fear: there is no danger yet.' She was right, for none of the relations came. The next time that the farmer walked past the nest, he was heard to say to his son, 'I see we cannot rely on others, and to-morrow we must take off our coats, and reap the field ourselves.' When this was reported to the lark, she said, 'Now, my children, there is danger indeed: we must stay here no longer, since the farmer has ceased to look for help from others, and has resolved to do the work himself. He will now, no doubt, mind his own interest; and therefore our business is to get out of the way.'"

Of the spelling I have already spoken. The penmanship, as was to be expected, differed much in different schools, much in the same school. Some papers indicated that a system of penmanship was taught and well taught in the school; others, that no system was taught, even if the pupils wrote at school; and, while the penmanship as a whole was quite good, some of it was more fashionable than legible. Others still showed that not

much time or attention was given to the subject at school or at home. Perhaps I cannot give the impression made upon me by the papers of the different schools in any better way than by quoting from my minutes.

A. — "About one-half the class gained a full and correct idea of the story. A very few expressed the ideas grammatically and well. Most showed an ignorance of the correct use of capitals, and very few showed any knowledge of the use of punctuation-marks, even the most common. In only one of the eighteen papers were quotation-marks used."

B. — "Such words as 'lark,' 'night,' and 'brought' were divided, — a part put at the end of one line, the rest at the beginning of the next."

C. — "Capitals and punctuation-marks were quite correctly used; but quotation-marks were not used, and words were sometimes improperly divided."

H. — "In the story the pupils were quite successful. They generally received the correct ideas, and expressed them grammatically and happily. They had a good knowledge of the use of capitals, of punctuation, and of quotation-marks."

The papers from the various schools differed greatly in their general appearance. Some pupils were accustomed to written exercises, examinations, or recitations, and their papers furnished proof of the fact; while others evidently were not accustomed to such exercises, and hence worked to a disadvantage. Indeed, when I put the classes to writing, I was told I had taken them at their weakest point. Had the classes been called upon by their teachers to write more, the mistakes would have been fewer.

I have thus given, imperfectly I know, the result of my examination of a part of the schools of Franklin County. I found some good schools, more poor ones. Where I found the best schools, I found that the teachers had had a professional training or a valuable experience, or both, that their situations were permanent, and that they were paid better wages than were paid the teachers in adjoining towns or in other sections of their own town. I found also that the schools are better in a town where there is a good high school, than in a town where there is none. Where I found poor schools, I did not always find a lack of interest or of good-will or of effort on the part of the school committee, but obstacles that seemed insurmountable. When a town pays a school tax of four to six mills on a dollar of its valuation, it cannot reasonably be asked to pay more. We hear it said that the children are the children

of the State; that the State needs an educated citizenship, and therefore undertakes the education of the children. If all this is not a "glittering generality," a mere "rhetorical flourish," it becomes the Commonwealth to do more than it has done to assist the towns who thus tax themselves for their schools. A tax paid by the State equal to two or three mills on a dollar of a town's valuation, to a town which taxes itself for its schools four mills or more on a dollar, would be a great help to the town, and a recognition of the principle that the State as such owes the children an education. Even then the poorer towns would find that to maintain good schools would tax all their energies.

In the summer vacation I visited various towns in the five western counties of the State, some of them more than once, to decide upon places for holding teachers' institutes and to make arrangements for them. The Secretary began to hold those early in September, and until the middle of November I was constantly occupied with them. Since that time I have been busy at his office upon the statistical part of his report, or at my home upon the papers of the several schools examined, and upon my own report, which is herewith

Respectfully submitted.

E. A. HUBBARD.

SPRINGFIELD, Dec. 31, 1881.

D.

ANNUAL REPORT ON INDUSTRIAL ART EDU-
CATION FOR THE YEAR 1881.

BY

WALTER SMITH,
STATE DIRECTOR OF ART EDUCATION.

REPORT.

THE reports which I had the honor of submitting to the Board for the years 1879 and 1880 were of such length and comprehensiveness of detail and general scope, that I feel so full a report of this year's work is, under the circumstances, not expected, though the development of this branch of public-school education has not diminished, either in its results, or in the interest felt by the public.

THE NORMAL ART SCHOOL.

The conclusion of the school year at the end of June, 1881, terminated also the first year's occupancy of the Deacon House as a Normal Art School, and enables me to record the results of transferring the students to increased and more commodious premises than have been occupied in previous years.

The object which the Legislature, by its resolve of April 13, 1880, sought to secure for the school by its removal from 28 School Street, was, to use the words of the resolve, that "*said accommodations to be in a building or part of a building which, with the entrance or entrances to it, shall be under the exclusive control of the officers of the school;*" and this condition was intended to remedy serious and proved inconveniences in the past experience of the school, arising from the absence of such control.

A year's experience at the Deacon House, in an isolated building exclusively controlled by the officers of the school, proved how important the condition was to insure successful administration and the comfort and convenience of the students. The marked improvement in the character of the work produced by the students was noticed by me in my report for 1880, when we had been in the premises only three months of

the school year; but it was only when that year terminated in June, 1881, that the nature of this change could be fully estimated.

The exercises in time-work wrought at the yearly examinations, and the finished drawings, paintings, modellings, and designs presented as diploma or certificate works, produced during the year, entirely surpassed any thing ever before produced in the school, and might be described as a transformation from twilight to daylight. The additional space and improved lighting, the convenience and personal comfort of both students and teachers, with the improvement in spirits which resulted, had borne fruits in the studies, and amply justified the removal of the school.

In this connection I might refer to the exhibition of the complete course of studies as pursued in the four classes A, B, C, and D, which was made at the Mechanics' Fair in Boston, during the months of October and November, 1881. One large room was nearly filled by the works of the four classes, representing in order the four years of graded study. Part of this room was occupied by the exhibit of the industrial-art work of the public schools in New Bedford. These two exhibits, which together filled the room, were the most remarkable display of pupils' work in these branches that I have ever seen, here or elsewhere; and I speak with considerable personal knowledge and observation of similar displays in this country and in Europe. This result is suggestive of the practical consequences which follow in the path of systematic study, as well as the capacity of our race (sometimes doubted in the past by some, never by me) for success in art.

As a consequence of the faithful and continuous labors of teachers who have been engaged in the Art School from its establishment, this result, so far as the school is concerned, ought to be recorded and acknowledged by myself, under whose direction they have worked, and who alone have had the opportunity to observe intimately the growth and improvement of the school and its students during the period covered by their engagements as instructors. This duty I gratefully perform; the more willingly because two of these instructors, Miss M. E. Carter and Mr. William Briggs, ceased their connection with the school at midsummer last, the first after eight and the second after seven years teaching in it.

Mr. R. W. Vonnoh, a student of the school, and more recently an assistant teacher in it, resigned his position in order to pursue his studies in art abroad; and Miss Dora M. Norton also resigned to accept a better appointment in the Columbus, O., School of Art. Thus, of the nine teachers employed up to July, 1881, four ceased their connection with the school at that time.

By changes of duties and the increased employment of some teachers, only two new teachers were engaged in the places of those who left, — Miss M. A. Bailey and Mr. A. H. Munsell (Mr. C. M. Carter being employed for one exercise per week only); and I cannot more completely show my good feeling towards them as late students and present teachers of the school than by wishing for them success as thorough and distinguished as that which has been won for the school and themselves by their predecessors, when equal application and experience shall have been displayed and acquired by them in their new opportunities and engagements.

The attendance of the year 1881–82, as compared with the last year 1880–81, is as follows:—

CLASS.	No. OF STUDENTS.	
	1880-81.	1881-82.
A. First year	130	76
B. Second year	56	58
C. Third year	9	6
D. Fourth year	16	12
Evening class	72	abolished.
Totals	283	152

This shows a serious decrease in numbers, but some new students may enter for the second term, and make the contrast less striking; though the abolition of the evening class must necessarily reduce the total number of students for the present year as compared with the last.

THE NORMAL SCHOOLS.

The grading of the subject of drawing, adapting its several features and subjects to the capacities of pupils in different grades of the public day schools, has been a work of time, and

could not proceed more rapidly than the creation or development of agencies by which it could be carried out. This has been now so far accomplished that a systematic arrangement of work in all grades has become possible, and was fully detailed in my report of last year; the "plan and graded programme" of the day school portion having been a part of the report of 1879.

The character of the drawing which should be taught in normal schools has by this progress assumed a more distinct form. For a long time the students in them came without any or with little skill in drawing, and consequently had to be taught to draw. In recent years the teaching of drawing in public schools to children has prepared the normal students, not only for higher instruction and advanced practice, but for the study of how to teach the elements of drawing. This is an important advancement in normal work, bringing the subject up to the plane of other studies, and enabling the special teachers of drawing in the schools to prepare their pupils for successful practice in teaching in the class-room, whilst in previous years they had enough to do in teaching them to draw.

Making use of this progress, after my usual visits to the schools, and observation of the work, I have been enabled during the past year, through the co-operation of the principals and special teachers, to arrange and introduce a uniform course of practice in drawing and teaching drawing in all the schools, and to bring it into operation in September, 1881. It is arranged progressively for three years of study, and is of three grades, called the first, second, and third grades, corresponding to the primary, grammar, and high school grades of day schools, and embracing in its practice the subjects which should be taught in those schools.

The means of instruction are the blackboard and the object only, and no printed text-books are to be used in either grade by the pupils. This throws much additional work upon those who teach drawing in the normal schools; for the method of teaching is by class instruction only, and it has been admirably well done so far. No better evidence could be given of the general progress made in this whole subject than the ready and excellent manner in which both the teachers and the students have taken up the study on a broader basis than before existed. I have examined the work done upon this plan in all the

schools, and am thoroughly satisfied with it. From my observations also, I judge that both the principals and teachers of drawing in the schools are well pleased with this new departure.

Such a development as this was not possible before, from many causes, the principal of which was the want of preparation for such work on the part of the students, before referred to. But that which assists in making it possible now, and immediately successful also, is that the special teachers of drawing in the normal schools are exceptionally admirable teachers, with experience in education and skill in teaching drawing such as could hardly be equalled outside of the schools. This is a gratifying result, and gives the most hopeful and promising indication of future progress in industrial art which the State at present has to show; for by this development the education in the elements of taste and skill of every child will be provided for in the future, through the previous instruction of every teacher whilst in the normal schools.

The conferences of all the teachers of drawing from the normal schools, which have been held on my invitation at the Art School in Boston during the past year, have been very profitable and encouraging, tending to uniformity of action and mutual help which predicts further advancement.

THE FREE EVENING INDUSTRIAL DRAWING CLASSES FOR ARTISANS.

The absence of qualified teachers for these evening classes is being to some extent remedied by the training given in the Normal Art School to students who become their teachers. But that which is equally necessary to successful instruction and administration of these classes, viz., experience, cannot be given in a normal school nor to young teachers; and until such experience has been acquired, both by committees and teachers, the success of the classes must be variable.

I have considered that the most valuable work which could be done to advance good results was the training of promising youths of both sexes to become teachers, when the opportunity to do so should be given them in the class-room; and to formulate for their guidance practical plans of instruction to be carried out in such classes as might be intrusted to them. The action of the Normal School has secured the first of these aids;

and the scheme for class instruction which I drew up for the evening classes of the city of Boston, and is now in its second year of successful operation in them, furnished the second. The publication of this scheme in the last Annual Report of the Board of Education, and in a separate form as one of the papers issued for the information and guidance of the Normal Art School students, has made it available for all the evening drawing schools in the State; and either as it stood, or modified to suit local arrangements, it has been widely adopted.

The absence of a systematic plan of study, and desultory or individual instruction of pupils in evening classes, is responsible for much of the want of interest felt by the classes, and for the greater part of the irregularity of attendance by the individual pupils. This frivolity and irregularity of attendance has been the most crying evil, and the most difficult to cure; but it has already been seriously diminished in Boston, and will, I am persuaded, be practically cured by the scheme of study now introduced, if it should be persevered with, and may be as effectually prevented in other places by adoption of the same means.

As this is a practical question, viz., the attendance of pupils, and one which affects the existence as well as the efficiency of these evening classes, it may be useful to describe here the experience of the city of Boston in this matter.

When the classes were first opened, about eleven years ago, it was found that a large number of pupils offered themselves for instruction, and continued to do so at the commencement of each annual winter term, who felt no responsibility to attend the meetings through the whole term, or to attend even for a time regularly. Thus the classes were large at first, and dwindled away as the session progressed, or were re-enforced by new pupils who were admitted at any period of the course; and few who began remained to the end of the term. Many efforts were made to remedy an evil so great, and in the year 1875 I proposed a plan of class instruction and a form of admission of students to the classes, by which they engaged, if admitted, "to attend regularly through the whole course from October to April, unless prevented by sickness or removal from the neighborhood."

This proposal, perfectly just as it would have been to the public which paid for the instruction, and to earnest students who sought it, was regarded as an interference with the right

of the pupils to study what subjects they chose, and their freedom to attend as often as they conveniently could; and so the plan was not accepted. The evils continued, and were brought to the attention of the committee by Dr. Eliot, the superintendent of schools, in the winter of 1879-80, who suggested, entirely from his own observation and without having conferred with me on the subject, the cause of the evils, viz., the absence of a uniform plan of study, and the irresponsibility felt by the students to attend regularly. Upon his suggestion to, and by direction of, the school committee, I was required, in the spring of 1880, to report upon the evening drawing schools; and did so, bringing into my report the proposal of 1875 which had not been then accepted. This scheme for the re-organization of the schools, resuscitated in 1880, was adopted by the committee, and went into operation in the fall of that year.

It provided for, —

1. A two-years' course of study: (1) elementary, (2) advanced or technical.

2. Admission of students by examination, and on a written engagement on their part to attend regularly, or forfeit their privilege, unless absences were satisfactorily accounted for.

3. Class instruction by teachers, and a uniform and systematic course of studies by the pupils.

4. Examinations at the end of the course in all the subjects taught, and award of certificates to those who produced the full number of works required, and passed the examination.

The working-out of this scheme during the session of 1880-81 (from October, 1880, to April, 1881) was closely supervised by myself; and though the work was new to most of the instructors, and required more discipline and attention on the part of the pupils than was expected before, the result was considered to be eminently satisfactory, on the whole. At the end of the session I examined every exercise presented, produced either in the classes during the year, or at the examination at the end of it, and ranked them, after the instructors had prepared them for the scrutiny, and recorded their own opinion of the works. This supervision and examination gave me a thorough opportunity to see the influence of the change which had been made, and to compare the statistics of attendance and results of instruction with those of previous years; without a doubt there was a development entirely in the right direction.

The following table of statistics gives the details of the year's experience, compared with those of the previous year, 1879-80:—

Statistics of the Free Evening Drawing Classes of the City of Boston for the Years 1879-80 and 1880-81.

NAME OF SCHOOL.	1. NO. OF STUDENTS.		2. AVERAGE EVENINGS ATTENDED.		3. AVERAGE DRAWINGS PRODUCED.		4. NO. WHO SENT NO DRAWINGS.		5. NO. ATTENDED EXAMINATION.	
	1879-80.	1880-81.	1879-80.	1880-81.	1879-80.	1880-81.	1879-80.	1880-81.	1879-80.	1880-81.
Appleton Street .	206	136	$\frac{28}{80}$ *	$\frac{28}{80}$ *	2	6	69	36	96	62
Tennyson Street.	93	101	$\frac{24}{44}$	$\frac{24}{44}$	4	11	13	19	41	50
Roxbury . .	210	101	$\frac{18}{80}$	$\frac{24}{80}$	5	8	60	24	70	38
East Boston .	115	67	$\frac{22}{80}$	$\frac{20}{80}$	3	7	21	—	53	24
Roslindale . .	73	40	$\frac{25}{80}$	$\frac{21}{80}$	5	8	30	12	25	18
Charlestown .	112	88	$\frac{21}{80}$	$\frac{24}{80}$	2	7	38	25	46	22

This table requires some explanation to show reasons for considering the results an improvement in 1880-81 on those of 1879-80. For convenience I will refer to each column as indicated by the numeral at its head.

1. It will be seen that the number of students are recorded in each class, except one, as being fewer the second year than the first. But in the first year's column every student who attended even but once or twice was recorded: in the second year only those who attended a minimum number of five times were recorded.

2. The second column shows the flagrant extent of the evil of non-attendance and irregularity, which, though it was seriously improved in the second year, was even then extremely unsatisfactory. To take the first class on the list: In 1879-80 the Appleton-street class was open for study eighty evenings, and the average attendance of the students was twenty-eight evenings only, or a little more than one evening in four,—which means that the city incurred the cost of keeping the classes open, i.e., paid for instruction, lighting, etc., for nearly

* The upper figures in the fraction give the average number of evenings the students actually attended; the lower number gives the number of evenings the classes were open, and which they might have attended.

three evenings out of four when the students were absent. But in 1880-81 the classes were open sixty evenings, and the students attended thirty-five evenings, or more than two evenings in four: a decided improvement, but one which requires still more attention to make it as it should be. So with the other classes.

3. In every case the result of better attendance, and to some extent of more systematic study, was the production of more and better work, as is shown by the figures.

4. This shows that the number of students who had no presentable work for examination was also decreased by the change; i.e., more students had something to show for their winter's study.

5. The number attending examination at the end of the course was considerably less the second year than the first; and this is accounted for by the fact that in the first the students were examined in only two subjects, whilst in the second there were six subjects of examination; and to be qualified for them the students should have attended the lectures, and produced the certificate drawings in the several subjects, to be entitled to the examination. Many, through irregular attendance, had not become so qualified, and were not therefore present at the examinations. In the first year there were no restrictions.

Though there must be, in every class for adults who are dependent on their daily labor for support, a certain amount of necessary irregularity of attendance, arising from sickness, stress of work, or removals, these causes do not explain such a serious proportion of irregularity as is here shown. Most of the pupils are under twenty years of age, or thereabouts; and some of the legitimate excuses for non-attendance do not apply always to them. Besides this, it is somewhat significant that disagreeable weather affects the attendance of adults at evening classes more than it does that of children in the day schools.

The desultory character of the instruction, and want of sustained interest in the work, may be responsible for some of this poor attendance in the past, but does not account for it now. Until it is substantially removed, the results of the instruction will be of little practical value, either to students or the community.

The progress made to this end, by one year of better organi-

zation, and on an improved plan of instruction, indicates that in time, and with sustained care, the evil may be modified to a great extent, and should finally be completely remedied.

THE STATE EXHIBITION OF DRAWINGS.

It was thought advisable to hold the annual exhibition of drawings during the past year in the Mechanics' Fair, rather than in the usual way at a separate exhibition. Owing to a delay in issuing notices of such an intention, few of the cities usually represented made an appearance. Want of sufficient room in one place prevented the works which were sent from being displayed together, and thus the interest in the collection was to some extent decreased by the isolation of its parts. As awards of medals and certificates were offered by the managers of the fair, it was not considered necessary that other awards should be given; and consequently the distribution of marks of "excellent" and "honorable mention" was not made, as in previous years, by the State board of judges.

The classes represented at the exhibition were from Kingston, Dedham, Brockton, New Bedford, and South Boston, and the large exhibit of the Normal Art School. Awards were made to the displays of the Normal Art School, New Bedford, South Boston, and the Brockton evening school. It is to be regretted that, for the first time in nine years, the city of Boston had no exhibit of the evening-school work, either at the fair or elsewhere, during the year.

CONCLUSION.

The continuous training of students to become teachers, as carried on in the Normal Art School; the normal work in the study of drawing as it should be taught in public schools, as now practised in the normal schools; the introduction, testing, and practical success of class instruction in the free evening drawing classes, on a graded plan of instruction, together with the general teaching of drawing in a large proportion of the day schools in the State, — all show that the subject of industrial drawing has really become incorporated into the public-school system.

The act of the Legislature which called forth this development was passed and became law in May, 1870; and it seems to me that the work which has been above referred to shows that

under somewhat difficult circumstances it has been effectively carried out, up to a point which has placed it beyond the character of an experiment.

Respectfully submitted.

WALTER SMITH,
State Director of Art Education.

E.

**PLAN FOR FURNISHING FREE TEXT-BOOKS
ADOPTED IN FALL RIVER.**

BY

WILLIAM CONNELL, JUN., SUPERINTENDENT OF SCHOOLS.

● 1911年10月10日武昌起义爆发，结束了清朝的统治。

● 1911年12月29日，清帝溥仪宣布退位，结束了中国两千多年的封建帝制。

REPORT.

IN March, 1873, the Legislature passed the following law authorizing cities and towns to furnish pupils in the public schools with text-books:—

“Any city by an ordinance of the city council, and any town by legal vote, may authorize the school committee to purchase text-books for use in the public schools, said text-books to be the property of the city or town, and to be loaned to pupils under such regulations as the school committee may provide.”

In December of the same year, the city council of Fall River passed an ordinance authorizing the school committee to purchase text-books for use in the public schools in accordance with the law above quoted. A few days after the passage of this ordinance, the school committee voted that in future they would purchase at the expense of the city all text-books to be used in the public schools, in accordance with the provisions of law and the ordinance of the city relating thereto.

The following regulations were adopted by the school committee in relation to the subject:—

“1. Teachers shall label with some appropriate inscription all text-books, designating them as city property.

“2. They shall order, in writing, the number of each kind of text-book and school supply needed from the superintendent, who shall thereupon furnish the same, and charge them to the teacher ordering them, in a book to be kept by him for the purpose.

“3. They shall keep an account of the text-books and other articles furnished each pupil; and in case of loss or undue injury they shall require the book or article to be replaced at once.

“4. They shall account to the superintendent, at the close of each school term, for all text-books and supplies furnished them by him; and, in case of loss of any article by their neglect, they shall be required to make it good.

“5. They may allow their pupils to carry their books home for study, if in their judgment it is necessary.

“6. For pupils to mark upon or otherwise deface any book furnished by the city, must be regarded as a serious offence.”

The superintendent was by vote empowered to make the purchase in behalf of the school committee, and as far as practicable he was to buy books from publishers, so as to save all intermediate profits. He was also further instructed by vote to procure stationery and all school supplies necessary for teachers in teaching, as well as all articles considered needful for pupils in the preparation of their lessons. The schools by this arrangement became absolutely free from cost to families as such, and this item of school expense, like all others connected with the carrying on of our common-school system, was assumed and borne by the tax-payers.

In April, 1874, the system went into operation. The practical question to be considered then was, how best to make the introduction. Should it be effected by classes, as they were promoted, or should a complete and instantaneous change be made? After much deliberation it was decided to make the change gradually, that is, by classes as they should be promoted to higher books. Any pupil, however, whose books had become too poor for longer use, was supplied also at this time with those belonging to the city. By this arrangement, it was thought, less confusion and excitement were created in the schools, than would have been experienced if the introduction had been completed all at once. It also had the advantage of giving more time to perform the labor consequent upon the change, and at the same time it kept down to a lower point the expense to the city for the first year.

No difficulty was encountered in making the transition from one system to the other in this way. Those children who had suitable books of their own were permitted by their parents to use them. There was a very general feeling in favor of the new plan in the city, and no one seemed disposed to put any obstacle in the way of its successful working.

The books and supplies are kept in the rooms of the school committee, in the charge of the superintendent, who, with the aid of a clerk, distributes them to the schools on receipt of a written order from the respective teachers. No goods are delivered without such an order, and it must designate the number and kind of books or other articles desired, the school-house and the particular room in which they are to be used, and must be signed by the teacher to whom they are to be charged in accordance with the regulations above quoted. Teachers

usually send their orders for supplies to the superintendent, by one or more of their pupils, who receive and deliver the articles ordered, if not too bulky. Large packages are sent to the schools by an expressman. The following is the form of order in blank, furnished teachers for this purpose : —

Fall River, Mass.,.....18

.....Supt. of Public Schools.

*Please send me the following Text-Books and Articles for use in
the Public School kept in.....
School Building, Room No.....*

.....
.....
.....
.....

.....Teacher.

These orders on being filled are checked and filed, and at a convenient time the respective accounts of the teachers are debited with the articles ordered and delivered.

At the close of each school term, agreeably to the regulations adopted by the school committee, teachers are required to account for all the books and supplies furnished them; and at these periods the several accounts are examined and closed. Those articles which have been used up in school-work during the term are charged off, and all those fit for further use are carried to new account.

For the teachers of the different grades a separate account-book is kept. The large number of text-books and other articles required in the higher schools, compared with the number used in the lower ones, makes the adoption of this expedient desirable, so as to simplify the ruling in the account-books, and lessen the labor in making entries therein.

If, on closing the accounts, it is observed that a particular teacher has not accounted for all the text-books furnished, or has been too lavish in ordering supplies, he is at once called upon to make an explanation of the affair; and, in case of miss-

ing articles, he is expected to replace them, if lost through any neglect of his. By holding teachers to a strict account, in this way, for a proper care and use of property furnished them, there is but little danger of an extravagant or wasteful use of it. The care exercised by them in this matter has been very satisfactory, and in but few instances have they found it necessary to replace a missing article, and as a matter of fact but few are lost.

Above, a description, in brief, has been given of the way accounts are kept by the superintendent with each teacher. By the regulations governing the subject of free text-books, teachers are required in turn to keep an account of the books and other articles furnished each individual pupil. The following will illustrate how this is done : —

On receiving text-books from the superintendent, and before loaning them to pupils, teachers are required to paste on each book the following label, which, when properly filled out, will designate not only the school-building and the room to which each book belongs, but the particular pupil also to whom it was loaned : —

<div style="border: 1px solid black; padding: 2px; width: 80px; margin: 0 auto;">CITY SEAL.</div>	<h2 style="margin: 0;">PUBLIC SCHOOLS.</h2> <hr style="width: 20%; margin: 5px auto;"/>
<p><i>THIS BOOK BELONGS TO</i></p> <h1 style="margin: 0;">THE CITY OF FALL RIVER.</h1>	
<p>IT IS LENT TO THE TEACHER OF</p> <p>..... GRAMMAR SCHOOL.</p>	
<p><i>Room No. Book No.</i></p>	
<p><small>Books must be accounted for to the Superintendent by the teachers at the close of each term.</small></p> <p><small>Teachers may allow pupils to carry their books home for study; but in case of loss or material injury the book must be replaced at once by the pupil.</small></p> <p><small>To mark upon or otherwise deface any book furnished by the city must be regarded as a serious offence.</small></p> <p><small>Teachers shall be held responsible for the proper account and care of books.</small></p>	

These labels are furnished to teachers, and the work of pasting them on the books is not expected to be done in school hours.

Before distributing these books, teachers number their pupils one, two, three, four, etc., to fifty, if they have as many in their rooms; and to pupil number one they loan book number one; to pupil number two, book number two; and so on. The number given each pupil may or may not designate his rank in scholarship; and, as a rule, it is better that it should not. If several kinds of text-books are used by the same pupil, — for instance, a reading-book, an arithmetic, a geography, a history, etc., — the reading-books are numbered one, two, three, etc., as before. The arithmetics, geographies, histories, etc., are numbered the same way, one, two, three, etc., to fifty, if necessary; and to pupil number one the teacher gives reading-book number one, arithmetic number one, geography number one, etc., and to all other pupils, the books bearing a number corresponding to the number by which he as a pupil is designated in keeping the account. In well-graded schools this method of keeping the account of books by teachers is both simple and effective. The order in which names are written in the school register is a good way to number pupils.

In ungraded and high schools many kinds of text-books being in daily use, occasioned by the great diversity of subjects taught, some modification in keeping the account is necessary. In these schools the following plan is generally adopted by our teachers: A blank book is procured, and prepared as follows: at the left-hand side of each page a marginal line is ruled down the page a sufficient distance from the left-hand side to allow for writing the names of pupils. From this line to the right edge of the page, lines are drawn parallel to the first, and about three-eighths of an inch apart. About an inch from the top of each page a head line is drawn. Between this line and the top of page, and between the parallel lines drawn down the page, the names of the different kinds of text-books supplied to pupils are written. When the names of pupils are written in the place intended for them, the teacher inserts on the same horizontal line with the name, and under the appropriate headings, the numbers of the different text-books loaned him. In these schools it is difficult to give each pupil all the text-books he uses, numbered to correspond with his individual number as a pupil, i.e., the order in which his name appears on the register.

By the above way of keeping the account, a teacher can tell at a glance which pupil he should hold responsible for any book that may be lost or damaged.

In supplying pupils with pens, pencils, and all such articles, no entry is made against each name. The account is kept in a more general way. For instance, in our grammar schools we estimate that a gross of pens is sufficient to last a school of forty pupils for a term of ten weeks in their ordinary school-work, and that in no case should it exceed two gross. We expect a hard lead-pencil such as we supply (Dixon's H) to last a pupil, in grammar school, one term of ten weeks in doing his ordinary work. In the High School we limit our pupils on the average to two lead-pencils per term,—one for ordinary work, the other for drawing. We have rarely been called upon to exceed these limits in supplying our pupils, and with proper watchfulness but little if any necessity for it exists. Teachers at the beginning of each term see that each pupil is supplied with a pencil and a pen, and he is held to a proper care and use of them. By many teachers these are collected after each exercise in which they are used.

In the grammar and high-school grades we expect a text-book to last from three to four years on the average when in constant use. In the lower grades, and especially in the lower primary classes, books do not last as long,—on the average not much over one year. By teachers who are watchful, and who insist on a proper care and use of all school supplies by their pupils, a better record than this even is obtained. This, however, is not reached because the articles are sparingly dealt out. It is far otherwise; for every thing needed, both by teachers and pupils, is furnished in great abundance. A judicious economy, however, is required and insisted upon in the use of all school supplies.

In keeping the accounts it is immaterial whether the system above described is used or not, provided some plan is adopted whereby the individual accountability of teachers and pupils is secured. Whatever system is used, it is very desirable that it should be simple and effective, and so arranged that but little time will be required in making entries.

Having dwelt on the practical details of the system of free text-books, I wish now to say a few words concerning the advantages it possesses over the old way. What are the advantages?

In partially answering this question I present, first, the following statistics, showing the cost of text-books, including

stationery, apparatus, etc., to the city, each year, since the adoption of the system in 1874. The number of pupils enrolled in our schools, and the average daily attendance, are also given for the same years.

YEAR.	Cost of Text-books, Stationery, etc.	Average Attendance.	Enrolment.	Cost per Capita on Average Attendance.	Cost per Capita on Enrolment.
1874 .	\$11,261 90	4,505	9,062	\$2.49	\$1.24
1875 .	5,288 15	4,555	9,988	1.16	.53
1876 .	4,370 65	4,875	8,864	.89	.48
1877 .	5,342 51	5,597	9,376	.95	.57
1878 .	5,425 60	5,727	9,604	.95	.56
1879 .	3,966 58	5,650	9,155	.70	.43
1880 .	6,609 02	5,845	9,363	1.13	.71
Total,	\$42,264 41	36,754	65,412	\$1.18 Av.	\$0.64 Av.

In examining the above figures it will be noticed that our largest outlay for books was in the year 1874, when the introduction was made. It should also be borne in mind that at the close of the year 1880 we had a full stock of supplies in our schools, the value of which could not be less than six thousand dollars. In addition to that, the cost of the books used in our evening schools is included in the above, in part, while the average attendance and enrolment, in the table, represent only the day schools. Yet, without making these deductions, the average cost per capita is but \$1.18 on the average daily attendance, and but sixty-four cents on the enrolment. It is doubted whether a parent for a series of years can in the usual way supply a child with all the text-books and stationery necessary for school work, for double the money.

The following are some of the reasons which contribute to the reduction in the cost:—

1. Books and stationery are purchased at wholesale rates, on the best terms known to the trade.
2. Books are used by successive classes till they are worn out.
3. They are better cared for, because they are charged to the teacher, and for that reason he is ever on the alert to see that each pupil properly cares for, and makes a legitimate use of, his books. Pupils feel that they are using city property, that their teacher has an interest in its preservation, and that if they mali-

ciously mutilate, destroy, or lose any article furnished them, they will be required to make the damage good. Under this system of watchfulness books last much longer than when they were owned by pupils.

Another advantage which this plan has over the old one is the following: Books and stationery are furnished every pupil as soon as needed. This item is of considerable importance, for under the old system it frequently happens when new classes are formed, or promotions made, that some pupils cannot get the books required till pay-day. This delay retards the work of the whole class. By the free text-book system, on the first day of each term every pupil can be supplied with every article he needs; lessons can be assigned at once, and the work of the schoolroom entered upon without needless delay. Teachers feel a greater freedom, also, in making promotions, because they have the necessary books to supply to the pupils they deem fit for advancement.

Another advantage: The child of wealth is put on the same plane with the child of poverty. No odious distinction now exists between them, so far as the ownership in the books they study is concerned.

Again, this plan favors variety in the use of text-books, without inconvenience or increased cost. Two series of readers can be successfully used at the same time by having one school read from one series, and another school from another; and, after each has been read sufficiently, the books can be exchanged and read by the other schools, and thus give variety without additional cost. What is true of readers is true of any other text-book.

Another advantage is increased attendance at school. By noticing the statistics above, it will be observed that the average daily attendance has yearly increased since the adoption of free text-books. During the seven years the enrolment has increased but 301, while the average attendance has gained 1,340. In other words, the enrolment has increased, in the seven years, but two per cent, while the average attendance has gained twenty-seven per cent. This result is due almost entirely to free text-books.

On this topic, the school committee, in their report for 1878-79, speak as follows:—

"For some years all text-books and stationery used in schools have been furnished by the committee at the city's expense. When books were provided by parents the cost was cost to the city through its families; it is now cost to the city through the tax-payers. The difference in the mode of distributing the expense secures a much-needed relief to the poor. The principle involved in the new mode is the fundamental principle on which all free schools are based, and which is now for the first time fully carried out. Many of the bright children in all our schools are children of the worthy poor. Without free schools they could not be educated; without free text-books they could not remain in school as long as many of them now do. The statement is not a theoretical one. Investigation has been made of the effect upon school attendance of a small annual expense, corresponding in some degree to the expense of text-books; and official statistics have been compiled. These statistics have been recently gathered together by Mr. Homer B. Sprague, with the following results: In Connecticut a rate-bill of two or three dollars was formerly paid by each child. In 1868 the rate was abolished. The actual increase of school attendance the next year was six thousand pupils, with no perceptible increase of population; and the following year there was an additional increase of five thousand. In New York the rate-bill amounted to about \$2.75 a year. The increase of attendance following its abolition was twenty-two thousand the first year, fifty thousand the second year, and seventy-eight thousand the third year. In California the rate was \$2.50 for the school year. The increase of attendance following its abolition was six and a half per cent.

"The statute allows no option in respect to such of the poor as are unable to furnish themselves with books. But such a partial supply puts a kind of stigma upon poverty, to which many are exceedingly and not unworthily sensitive. It introduces an element of money caste, from which our schools should be wholly free. It is undemocratic in principle; and in practice it is impossible to draw a line between those who are able and those who are unable to furnish their own books. Bounty is offered to fraudulent pretence of inability. In forty-eight schools of Massachusetts, last year, sixty per cent of parents and children claimed assistance on the ground of extreme poverty.

"Under the new method of supply, the expense is greatly diminished. Careful computation by several towns in the Commonwealth shows a reduction in expense of seventy-five per cent. In Fall River the cost of supplying each enrolled pupil with books, pencils, rubber, pens, ink, slates, and crayons, is sixty cents per annum. As computed by average attendance the cost is one dollar per annum. Lowell supplies only its indigent pupils, and pays three thousand dollars a year. Fall River, with twelve hundred more pupils enrolled, supplies them all for five thousand dollars a year. Add now the indisputable fact, unknown to some of our citizens, that under the new method books are better cared for than of old, and last longer. There is a regular book-keeping account of them. When given out they are charged to the teacher: she is held responsible for preservation and careful use; she is required to render an account of the books every term, and her account is recorded for comparison. Her constant supervision is much more effective than the no-care of many parents. The books are used by generation after

generation of scholars, until fully worn out. Under the old system each generation supplied itself anew, and half-worn cast-away school-books were encumbering every home.

"School-work now begins promptly and goes on steadily, because books and stationery are constantly ready. Under the old system many children were wont to come without the needed book, or slate, or ink; days, and even weeks, passed by before the whole class was supplied. Not seldom pupils were kept from school altogether, because it was not immediately convenient to parents to supply their need; time was always wasted, and progress hindered. By the new system the effective term of school-life is manifestly lengthened.

"In the judgment of some, it were better to furnish books only to scholars in the lower grades of study; in the last years of grammar-school life and in the high school they should furnish their own. In part the judgment rests on misapprehension. The saving of expense would not be so great as supposed. In first cost books used in the higher grades are more expensive; but they are not so soon worn out, and a smaller number of them is required.

"The committee confidently believe it to be for the best interest of the community and the Commonwealth to give every possible facility and encouragement at precisely this point; to use all available means to prevent the dropping out of scholars from the higher grades of school. With a population like ours there is constant tendency to shorten the term of school-life: the resulting evils are many and great. We find cause for congratulation in the fact that in recent years the average term of school-life has been lengthening."

In reflecting on this subject it seems strange that legislation on this point should have been delayed so long. It is true, that previous to this enactment indigent pupils could be supplied with books at the public expense; but this method of furnishing them engendered a caste feeling in the schools, where it never ought to exist, and subjected the child of the worthy poor to an invidious comparison with his more opulent classmate, because the book his poverty compelled him to use was labelled "City property." This comparison is hurtful alike to both classes.

Now, inasmuch as an educated people is necessary to good citizenship, and to the prosperity and perpetuity of our republican institutions, it is the duty of the State to see that every child, the poor as well as the rich, is furnished with text-books and stationery at the public expense, the same as schoolhouses and land, janitors and fuel, teachers and apparatus, are furnished. There is no argument for one that does not apply with

equal force and pertinence to all. If the term "free schools" means any thing, it means free text-books and stationery; and, until these articles are furnished at the public expense to all, the term "free schools" is a misnomer.

WILLIAM CONNELL, JUN.

F.

REPORT ON SUPERVISION OF SCHOOLS IN
ONTARIO.

BY

DR. J. A. McLELLAN,
INSPECTOR OF HIGH AND NORMAL SCHOOLS.

REPORT.

By invitation, Dr. J. A. McLellan, the distinguished inspector of the high and normal schools of Ontario, has kindly furnished me with an interesting and clear statement of the system of school superintendence now most successfully employed in that province.

I gladly publish this paper in connection with the Annual Report of the Board of Education, hoping that at no distant day there will be established an equally complete and efficient system of school supervision in this Commonwealth.

J. W. DICKINSON.

TORONTO, Dec. 28, 1881.

DEAR SIR, — In accordance with my promise, I send you a few remarks on the method of school supervision which has been in operation in the Province of Ontario for the last ten years.

I may say at the outset, that our system of education may be said to be thoroughly national in character, including as it does a systematic gradation of schools from the lowest primary school to the university. Our excellent municipal system, by which our people are secured in the rights and privileges of local self-government, contributes very largely to the successful working of our educational machinery. It is not possible for the central authority to do all that effective administration requires; it probably would not be wise even if it were possible. There are some matters that must be left entirely under the control of the central authority (the Provincial Government); there are others that should be left to the local authorities. In our system there is a judicious co-operation of the two authorities. The Government has wisely invested the local authorities (county and township councils, and boards of trustees) with the highest powers consistent with the necessary unity of aim and method, and has used every available means to encourage liberality in local legislation for the support of both primary and secondary education. But the Government (Provincial) reserves as its peculiar function the right to (a) determine the qualifications of teachers, (b) to prescribe the courses of study for the national schools, and (c) to make the necessary provision for the *thorough inspection* of the schools, both primary and secondary.

Before 1871 the system of township (or "local") superintendents was in force. The power of appointment was vested in the township councils; and, as no special qualifications for the office had been prescribed by the Department of Education, it not unfrequently happened that men were appointed who had neither the scholarship nor professional skill necessary to the proper discharge of their duties. Indeed, it was impossible to secure, for the scant remuneration available, the required number of "local superintendents," qualified at once by scholarship and professional training. The plan worked badly. It was better than no supervision, and that is perhaps the best that can be said of it. But in 1871 a change was made which secures the supervision of the schools by thoroughly qualified professional men, — i.e., men who have been educated and trained for the profession of teaching. Let me call your attention, briefly, to the following points:—

I. Qualifications of inspectors (or "supervisors"); II. Appointment and remuneration of inspectors; and, III. Duties of inspectors.

I. By statute the power of fixing the *qualifications* of inspectors rests with the Department of Education, and no one can be appointed inspector who has not received the requisite certificate from the Department. Under the regulations of the Department, no one is now eligible for the office of county, town, or city inspector of schools, unless he has obtained a **FIRST-CLASS A** certificate, which is the highest certificate issued by the Department, and represents (1) high scholarship, (2) professional training, and (3) experience in teaching.

II. A county inspector of schools is appointed by the county council, and a town or city inspector by the town or city school board. Any county, city, or town inspector may be dismissed for *misconduct* or *inefficiency* by a *majority* of the council or board which appointed him; or, by a *two-thirds* vote, he may be dismissed *without cause*. Also, the Lieutenant-Governor (on the recommendation of the Education Department) may dismiss an inspector for misconduct or inefficiency.

The remuneration of a city or town inspector is determined and provided for by the board which appoints him. In the case of county inspectors, the school law provides that the amount paid by the county council shall *not be less* than five dollars per school per annum; and the Educational Department grants an additional sum of not less than five dollars per school. The county councils, however, usually give a fixed salary, and provide for the travelling expenses of the inspectors. It is proper to add here that an inspector is obliged to devote his entire time to the duties of his office. The statute explicitly declares that no inspector shall, during his tenure of office, engage in or hold any other employment, office, or calling.

III. The inspector has control and oversight over the public schools in the municipality for which he is appointed, and must act in accordance with the regulations of the Department. He is also subject to such instructions as may be issued by the Minister of Education from time to time. A county inspector must visit every public school under his jurisdiction at least once each half-year, must devote on an average at least half a day to the examination of the classes in each school (in a graded school, each division or grade is reckoned a school), and must record the results of such examination in a book to be kept for the purpose. Should he discover any thing

amiss, he must at once call the attention of the trustees ("school committee") to the matter; and, if they refuse or fail to provide a remedy, he may withhold the apportionment of the school fund which otherwise would be granted to the school section ("district"). The inspector is instructed to make inquiry and examination in regard to the following (amongst other) subjects :—

School accommodation and appliances ; school premises ; registers and visitors' books ; text-books ; organization ; discipline ; promotions ; qualifications of teachers ; methods of instruction ; school libraries.

The foregoing is an imperfect outline of a system which has proved very effective for the supervision of the public schools. In every complete organization of public instruction, supervision, systematic and thorough, is essential. Good teachers are indispensable; equally so are good inspectors. The teacher makes the school, it is said; in our experience, if the inspector does not make the school, he has a mighty influence in making or moulding the teacher. But the inspector must be a true teacher; he must be a man of good education, of large professional experience, and perfectly familiar with the best methods of instruction. It is not his chief duty, of course, to regard the teachers under his jurisdiction as suspicious characters who need the attention of a severe police; but to see that the regulations for the government and management of the schools are faithfully carried out, and that rational methods of instruction are followed in the national schools which are so largely to determine national character and destiny. The really qualified inspector is always found in thorough sympathy with the earnest and faithful teacher, courteously yet firmly pointing out his mistakes, aiding him in his difficulties, praising with pleasure, and censuring with regret.

As already intimated, one of the greatest defects—if not actually the greatest—in the practical working of our educational system was the lack of proper school supervision, and therefore I do not hesitate to say that the institution of the present system has proved the most important educational reform of recent years. Instead of a perfunctory discharge of duties for which, under the former plan, the "local" superintendent had but little fitness and but little sympathy, the proper discharge of the duties of an inspector now demands high literary attainments, long professional experience, and an entire consecration of time and energy to the work. By the present system the schools in each municipality are placed under the supervision and control of an officer whose duty and ambition it is to see that all things work together to promote the efficiency of the schools under his jurisdiction. The standard of education is thus raised, and its quality improved; in every school are introduced rational methods and wise discipline; weak points are noticed and gently corrected; irregularities are checked, and vicious modes of teaching banished from the schoolroom; in a word, every effort is made to have the great work of education based and carried on under a true conception of the moral and intellectual nature of man. Under such circumstances, the teacher knows that his work comes before one on whose judgment he can implicitly rely. Knowing that the results of indifference, or laziness, or slovenly teaching, or incompetency in any form, cannot escape the searching eye of his inspecting officer, even the laggard is quickened into some semblance of life. Or, if he remains untouched by the quickening power, he must speedily give place to more able or more earnest

men. On the other hand, the truly able and devoted teacher, knowing that his zeal, ability, and industry are sure to receive a just acknowledgment, is encouraged to persevere in his good work, and to strive to qualify himself yet more thoroughly for his high vocation.

Trustees, too, are more confident in the exercise of their powers and more earnest in the discharge of their duties when they know that within easy reach they can secure the advice of a competent officer; and when, on the occasions of his periodical visits, they learn something of the character of the work done in their schools, and are stimulated to use all available means for their improvement. The people have a guaranty that, under the control of an experienced officer, their school system, which is sustained at an immense expenditure and on which the public weal so largely depends, is rapidly reaching a high degree of practical efficiency, and that, too, without the sacrifice on their part of any rights or powers or privileges. And, lastly, the Government can expend its large grants for the education of the rising generation with confidence and security, and at the same time with justice to all, only when it possesses such information and data as systematic inspection can supply.

In conclusion, I reiterate that our system of thorough supervision has proved of incalculable advantage to the cause of public education. Our system of education is theoretically, I think, almost perfect in its organization; and under the stimulating influence of this great reform it is rapidly approaching a degree of efficiency which will leave it unsurpassed, perhaps unrivalled, among the nations. There was of course, on its first establishment, the usual outcry attendant upon great reforms. The cry of "Centralization," "Trampling on vested rights," etc., was vigorously raised; and wild ravings about "tyranny" and "impracticable schemes," and predictions of failure, fell from the lips of many a demagogue. But the event has falsified the predictions; and now the wildest and most reckless demagogue amongst the uncircumcised Philistines who would make political capital out of the nation's expenditure for the development of the nation's life does not venture to question the magnificent results of the new system of inspection, or to recommend a return to the system which it has superseded.

I must express my regret that the pressure of work upon me at this time has prevented me from placing this matter before you with the force and clearness which its importance demands, and which the facts of our experience would justify. If, later on, I can supply any thing further which may be of use, I shall be glad to do so. Meantime I hope that the grand old COMMONWEALTH of Massachusetts — to which we are indebted for some of the best features in our system of education — will soon be able to boast of a system of supervision even more efficient than ours, and, true to her historic past, continue to remain a model in every thing that pertains to the EDUCATION OF THE PEOPLE.

Yours very truly,

J. A. McLELLAN.

The Hon. J. W. DICKINSON

AN ABSTRACT
OF THE SCHOOL-RETURNS MADE BY THE SCHOOL-COM-
MITTEES OF THE SEVERAL TOWNS AND CITIES
IN THE COMMONWEALTH, FOR THE
SCHOOL-YEAR 1880-81.

BOARD OF EDUCATION.

BARNSTABLE COUNTY.

TOWNS.	Population - State Census, 1880.	Valuation - 1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 8 and 14 years of age.	No. of different pupils of all ages in the Pub- lic Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 5 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attend- ance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Barnstable	4,250	\$2,649,945	25	666	452	781	2	94	474	629	571	.90	25
Brewster	1,144	1,015,044	7	211	137	283	4	27	156	186	169	.81	7
Chatham	2,252	584,866	13	417	281	455	4	67	231	338	283	.84	13
Dennis	8,200	1,140,485	13	571	377	649	8	118	367	545	462	.84	13
Eastham	682	207,403	3	140	85	121	6	6	83	95	88	.90	3
Falmouth	2,422	2,961,906	14	386	229	411	1	50	231	351	280	.80	15
Harwich	3,265	988,290	15	646	492	724	-	179	545	611	511	.84	15
Mashpee	347	112,630	2	64	46	72	-	8	46	63	53	.84	2
Orleans	1,204	435,515	8	203	126	280	2	43	129	185	162	.87	8
Provincetown	4,345	1,674,273	16	528	500	906	-	73	490	880	807	.91	19
Sandwich	3,544	1,440,550	21	663	447	706	4	-	96	536	517	.88	23
Truro	1,019	241,274	7	180	123	207	1	41	120	172	157	.91	7
Wellfleet	1,908	754,561	10	345	-	345	-	45	157	345	308	.86	10
Yarmouth	2,173	1,398,544	10	355	-	400	-	55	227	310	269	.87	10
Totals	31,945	\$15,555,286	164	5,675	3,250	6,240	21	806	3,852	5,305	4,637	.87	170

BERKSHIRE COUNTY.

Adams	5,593	\$2,380,645	20	1,163	684	1,206	-	62	675	888	811	.91	22
Alford	348	268,768	3	64	40	71	1	3	46	46	40	.87	3

SCHOOL-RETURNS.

iii

Becket .	1,128	357,573	10	217	185	285	9	11	141	162	133	.82	10
Cheshire .	1,537	751,528	10	359	176	374	-	19	192	285	245	.86	10
Clarksburg .	724	210,215	3	158	97	171	3	2	106	126	80	.63	3
Dalton .	2,052	1,500,916	11	385	-	409	5	9	185	273	253	.92	11
Egremont .	875	433,668	5	249	85	144	-	29	104	89	89	.95	5
Florida .	459	141,893	6	116	56	123	2	12	56	103	98	.75	6
Great Barrington .	4,658	2,876,293	22	879	377	819	7	58	438	735	591	.80	24
Hancock .	642	384,381	7	94	-	115	4	10	62	84	67	.79	7
Hinsdale .	1,595	707,773	10	425	258	417	14	15	258	390	332	.85	10
Lanesborough .	1,278	586,259	8	275	168	306	2	20	192	239	184	.77	8
Lee .	3,939	1,836,559	18	758	511	887	13	80	561	744	640	.86	19
Lenox .	2,043	1,253,235	13	416	243	403	3	23	219	412	361	.87	13
Monterey .	635	229,904	5	120	71	137	6	27	77	83	74	.86	5
Mount Washington,	205	71,322	2	31	20	37	-	9	20	23	15	.65	2
New Ashford .	203	89,038	2	34	26	51	-	3	26	32	27	.84	4
New Marlborough .	1,876	642,595	13	395	310	423	10	16	310	309	233	.75	13
North Adams .	10,192	4,376,887	31	2,168	1,167	2,040	3	127	1,164	1,577	1,479	.93	35
Otis .	785	221,095	10	192	119	219	10	30	121	165	155	.90	10
Peru .	403	121,464	5	73	40	87	6	7	-	72	54	.75	5
Pittsfield .	13,367	7,542,618	45	2,521	1,488	2,716	17	196	1,553	1,987	1,774	.89	62
Richmond .	1,124	470,138	6	268	161	246	9	6	155	203	137	.67	6
Sandisfield .	1,107	384,593	12	206	144	214	3	34	141	177	148	.83	20
Savoy .	715	214,345	7	153	90	160	9	16	87	110	93	.85	7
Sheffield .	2,204	948,722	14	457	272	518	19	64	270	361	303	.81	14
Stockbridge .	2,360	2,240,316	10	376	257	404	4	49	274	282	256	.90	11
Tyringham .	542	243,085	7	120	59	147	2	25	59	115	72	.68	7
Washington .	492	212,825	6	128	-	131	4	8	77	87	72	.84	6
West Stockbridge .	1,934	723,372	10	441	354	511	3	25	279	322	350	.92	10
Williamstown .	3,395	1,584,006	14	669	402	719	4	43	400	456	443	.81	15
Windsor .	644	212,311	7	101	58	127	6	10	68	99	85	.86	7
Totals .	69,049	\$34,197,842	352	14,011	7,918	14,567	178	1,048	8,316	11,041	9,694	.88	139

BOARD OF EDUCATION.

BARNSTABLE COUNTY—CONTINUED.

TOWNS.	HIGH SCHOOLS.																	
	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A'ge wages per month of male teachers in Public Schools.	A'ge wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of schools kept less than six months each.	No. of High Schools.				No. of pupils.	How supported.	Lessons.		Salary of Principal.
										Schools.	No. of teachers.	No. of pupils.	Months.			Days.		
Barnstable	5	27	10	10	\$60 00	\$33 18	212-10	8-10	-	1	1	44	Taxation,	9			\$900 00	
Brewster	2	5	3	1	57 50	35 00	51-10	8	1	-	-	-	-	-			675 00	
Chatham	3	13	-	-	56 00	24 00	105	8-2	2	1	1	51	Taxation,	9			540 00	
Dennis	7	10	-	3	57 50	32 00	107	8-4	-	1	1	39	Taxation,	9				
Eastham	2	3	1	1	40 00	32 50	21	7	-	-	-	-	-	-				
Falmouth	3	13	4	3	80 85	35 37	117	8-16	-	1	2	23	Part tax,	9			1,000 00	
Harwich	3	11	2	2	45 00	30 00	105-10	7-10	-	1	1	50	Taxation,	7-10			320 00	
Mashpee	2	-	2	2	45 00	-	12-10	6	-	-	-	-	-	-			-	
Orleans	3	8	3	3	88 89	28 85	72	9	-	1	1	53	Taxation,	9			800 00	
Provincetown	1	16	3	3	85 00	29 60	145-10	9-10	-	1	2	84	Taxation,	9-10			950 00	
Sandwich	4	26	4	3	83 75	30 72	170	8-2	-	1	2	58	Taxation,	10			1,100 00	
Truro	3	7	-	1	50 00	22 40	52-15	8-5	-	-	-	-	-	-			-	
Wellfleet	3	10	2	1	67 66	29 50	81	8-10	-	1	1	58	Taxation,	10			1,000 00	
Yarmouth	5	7	2	2	71 29	28 71	84	8-8	1	1	1	41	Part tax,	9			900 00	
Totals	52	156	34	31	\$59 83	\$30 12	1,337-5	8-3	4	10	13	501	-	-			\$3,185 00	

BERKSHIRE COUNTY—CONTINUED.

Adams . . .	4	23	4	\$76 11	\$38 15	156-5	-	1	3	43	Taxation,	9-15	\$1,500 00
Alford . . .	3	3	1	1 29 34	21 34	27	9	-	-	-	-	-	-

SCHOOL-RETURNS.

[illegible]

BOARD OF EDUCATION.

BARNSTABLE COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for Schools, including board, fuel, care of dress and school-rooms, for the school-year 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expense of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Barnstable	\$10,999 71	\$9,000 00	\$353 93	-	\$42 00	\$409 16	\$645 12	-	\$749 50	-
Brewster	2,454 24	2,200 00	100 00	-	16 00	100 00	-	-	130 20	-
Chatham	3,758 00	3,000 00	209 00	-	30 00	254 00	-	\$88 00	177 00	-
Dennis	5,272 88	5,000 00	50 00	\$75 00	25 00	65 57	-	-	185 00	\$50 00
Eastham	1,100 00	900 00	50 00	50 00	8 00	20 00	-	-	75 00	-
Falmouth	5,093 12	4,444 25	217 41	-	21 00	213 00	-	582 49	214 97	-
Harwich	4,948 73	4,000 00	125 00	-	40 00	75 00	-	651 33	148 65	-
Mashpee	500 00	500 00	15 00	-	10 00	-	-	-	-	14 00
Orleans	2,931 19	2,400 00	105 00	100 00	16 00	-	-	270 19	104 19	-
Provincetown	7,733 41	6,754 30	350 00	350 00	10 00	50 00	9,500 00	-	120 13	-
Sandwich	8,567 35	7,400 00	300 00	300 00	41 00	70 22	-	185 39	-	-
Truro	1,694 25	1,400 00	97 00	50 00	18 00	15 00	-	250 00	140 00	-
Wellfleet	4,235 29	4,200 00	135 00	-	24 00	57 03	-	300 00	52 00	-
Yarmouth	3,493 49	3,800 00	90 00	-	35 00	84 40	-	-	297 79	-
Totals	\$63,381 66	\$54,998 55	\$2,197 34	\$925 00	\$336 00	\$1,413 38	\$10,145 12	\$2,327 40	\$2,394 43	\$64 00

BERKSHIRE COUNTY — CONTINUED.

Adams	\$22,674 38	\$8,538 50	\$650 00	\$550 00	\$25 00	\$478 17	\$12,858 28	-	\$124 43	-
Alford	520 59	578 00	25 00	-	10 00	-	-	-	5 00	-

SCHOOL-RETURNS.

vii

Becket . . .	1,431 82	1,303 50	54 75	-	4 25	7 10	-	\$25 91	36 31	-
Cheshire . .	2,728 24	2,500 00	105 00	-	7 50	57 53	-	-	76 29	-
Clarksburg .	667 59	700 00	20 00	-	22 00	81 29	-	-	196 25	-
Dalton . . .	7,184 52	3,500 00	-	-	-	176 36	3,500 00	-	8 16	-
Egremont . .	1,275 30	1,000 00	48 50	-	10 00	15 00	3,804 00	-	-	\$15 25
Florida . . .	538 88	538 88	20 00	-	9 18	-	-	83 04	36 96	-
Gt. Barrington,	8,411 60	7,500 00	177 13	-	-	218 00	-	-	-	-
Hancock . .	798 80	800 00	47 58	-	8 50	5 84	-	-	-	-
Hinsdale . .	2,541 73	2,500 00	55 00	-	-	15 61	-	-	70 57	-
Lanesborough .	1,257 79	1,200 00	65 00	-	6 00	21 18	-	-	36 98	50 00
Lee	7,309 47	7,260 00	221 75	-	20 00	279 24	-	290 00	727 00	-
Lenox	11,296 50	3,300 00	121 50	-	10 00	-	7,465 00	100 00	300 00	-
Monterey . .	700 00	800 00	49 00	-	3 50	19 00	-	-	22 00	-
Mt. Washington,	353 00	150 00	15 00	-	5 00	-	-	-	-	-
New Ashford .	102 00	102 00	20 00	-	6 00	15 45	-	-	4 00	-
New Marlboro',	2,000 00	2,000 00	57 75	-	10 00	-	-	-	-	-
North Adams .	16,930 77	16,092 98	150 00	-	118 50	417 82	-	-	887 79	-
Otis	1,000 00	1,000 00	59 75	-	10 50	9 77	475 00	160 00	15 00	-
Peru	746 00	600 00	18 00	-	4 00	-	-	-	-	-
Pittsfield . .	31,114 86	25,100 00	1,300 00	-	160 00	2,292 89	-	1,324 21	937 76	-
Richmond . .	1,000 00	1,000 00	61 00	-	25 00	-	-	-	60 00	149 00
Randisfield .	1,531 42	1,200 00	45 00	-	3 00	10 00	-	-	-	185 00
Savoy	557 50	500 00	38 00	-	9 00	8 50	-	-	2 00	-
Sheffield . .	3,479 20	2,500 00	181 72	-	14 00	60 44	-	-	55 30	-
Stockbridge .	5,031 63	4,500 00	219 00	-	28 00	-	-	-	-	-
Tyringham . .	750 00	600 00	30 00	-	12 00	-	-	47 23	10 00	54 00
Washington .	688 75	650 00	33 75	-	5 00	-	-	-	-	-
W. Stockbridge,	3,163 36	3,000 00	43 00	-	-	85 70	-	-	-	-
Williamstown .	4,576 88	4,500 00	90 00	-	23 64	-	-	-	228 63	-
Windsor . . .	670 50	400 00	25 00	-	6 00	1 00	-	-	8 30	-
Totals . . .	\$143,033 08	\$105,913 86	\$4,047 18	\$1,850 00	\$570 57	\$4,275 39	\$28,102 28	\$2,030 39	\$3,796 73	\$453 25

BOARD OF EDUCATION.

BARNSTABLE COUNTY — CONCLUDED.

TOWNS.	Amount of local funds can be appropriated only for the support of Schools and Acad- emies.	Income of local funds.	Income of surplus rev- enue and other funds, including the dog tax, used at the option of the town.	Number.	Whole No. attend- ing for the year.	Amount of con- tribution paid.	No. of Private Schools.	Whole No. attend- ing for the year.	Estimated amount of tuition.	Town's share of school-fund pay- able Jan. 25, 1881.	How much of said fund was used for appara- tus and books of reference.
Barnstable	\$1,500 00	-	\$335 96	1	-	-	-	-	-	\$216 74	\$54 18
Brewster	-	-	-	-	-	-	-	-	-	220 69	20 00
Chatham	-	-	65 00	-	-	-	1	8	\$180 00	241 95	-
Dennis	-	-	272 88	-	-	-	-	-	-	207 56	-
Eastham	-	-	-	-	-	-	-	-	-	214 14	-
Falmouth	10,000 00	\$600 00	215 82	1	23	\$250 00	-	-	-	184 24	-
Harwich	-	-	111 67	-	-	-	-	-	-	265 26	-
Mashpee	-	-	46 25	-	-	-	-	-	-	204 89	-
Orleans	-	-	30 84	-	-	-	-	-	-	220 69	-
Provincetown	-	-	-	-	-	-	-	-	-	238 00	-
Sandwich	8,500 00	150 00	282 98	1	-	-	-	-	-	208 14	50 00
Truro	-	-	31 25	-	-	-	-	-	-	215 81	-
Wellfleet	-	-	-	-	-	-	-	-	-	235 61	-
Yarmouth	16,000 00	900 00	139 76	-	-	-	-	-	-	180 13	-
Totals	\$31,000 00	\$1,650 00	\$1,632 41	2	23	\$250 00	1	8	\$180 00	\$3,503 35	\$124 18

BERKSHIRE COUNTY — CONCLUDED.

Adams	-	-	-	-	-	-	-	-	-	\$261 82	-
Alford	-	-	\$15 67	-	-	-	-	-	-	206 24	-

SCHOOL-RETURNS.

ix

Becket .	\$190 49	\$8 99	63 80	-	-	-	1	45	\$254 00	226 26	-
Cheshire .	-	-	-	-	-	-	-	-	-	230 07	-
Clarksburg .	-	-	-	-	-	-	-	-	-	217 94	-
Dalton .	-	-	-	-	-	-	-	-	-	184 52	\$35 00
Egremont .	-	-	36 57	-	-	-	-	-	-	215 02	-
Florida .	-	-	-	-	-	-	-	-	-	211 12	-
Great Barrington .	960 71	57 64	132 14	-	-	-	1	17	-	229 52	13 00
Hancock .	200 00	12 00	-	-	-	-	-	-	-	211 71	-
Hinsdale .	500 00	14 82	-	-	-	-	-	-	-	233 75	-
Lanesborough .	1,000 00	107 63	-	-	-	-	-	-	-	222 44	-
Lee .	1,608 33	86 60	-	-	-	-	1	8	60 00	226 68	-
Lenox .	-	-	-	-	-	-	1	10	400 00	190 58	-
Monterey .	612 01	36 72	90 55	-	-	-	-	-	-	211 79	-
Mt. Washington .	100 00	6 00	-	-	-	-	1	3	25 00	203 11	-
New Ashford .	-	-	15 67	-	-	-	-	-	-	203 01	15 45
New Marlborough, .	5,000 00	327 52	62 38	1	-	-	1	15	120 00	239 71	-
North Adams .	-	-	184 99	-	-	-	1	25	500 00	310 73	-
Otis .	-	-	49 95	-	-	-	-	-	-	218 03	-
Peru .	370 50	22 23	30 00	-	-	-	4	225	9,500 00	208 59	229 59
Pittsfield .	-	-	-	-	-	-	-	-	-	229 59	-
Richmond .	-	-	54 36	-	-	-	-	-	-	220 30	-
Sandisfield .	1,290 00	77 40	32 27	-	-	-	-	-	-	221 75	-
Savoy .	1,297 00	77 82	33 81	-	-	-	-	-	-	212 09	-
Sheffield .	1,600 00	90 00	272 33	-	-	-	-	-	-	243 41	-
Stockbridge .	4,000 00	350 00	-	-	-	-	3	20	2,400 00	184 33	40 00
Tyringham .	-	-	23 00	-	-	-	-	-	-	211 90	-
Washington .	-	-	38 72	-	-	-	-	-	-	212 76	-
West Stockbridge, .	-	-	59 93	-	-	-	-	-	-	244 29	-
Williamstown .	-	-	-	-	-	-	2	125	7,000 00	212 18	43 00
Windsor .	587 95	35 27	30 00	-	-	-	-	-	-	211 82	50 00
Totals .	\$19,316 99	\$1,310 64	\$1,225 64	2	21	\$1,200 00	16	493	\$20,259 00	\$7,067 06	\$426 04

BOARD OF EDUCATION.

BRISTOL COUNTY.

TOWNS.	Population - State Census, 1880.	Valuation - 1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 5 and 14 years of age.	No. of different pupils of all ages in the Public Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 5 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attendance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Acushnet	1,105	\$587,100	6	206	-	224	3	19	124	169	141	.83	6
Attleborough	11,111	4,934,941	39	1,866	1,029	2,058	25	85	1,108	1,541	1,359	.88	44
Berkley	927	391,650	7	150	94	188	3	28	83	118	98	.83	7
Dartmouth	3,430	1,789,600	19	506	298	516	13	49	292	400	329	.82	20
Dighton	1,791	703,817	10	805	196	873	1	37	226	270	232	.86	10
Easton	3,902	3,245,743	20	807	510	922	11	103	489	522	666	.81	24
Fairhaven	2,875	1,370,073	10	448	332	485	4	57	304	406	360	.88	13
Fall River	49,006	39,650,761	121	9,763	5,686	9,363	-	410	5,618	6,559	5,845	.89	154
Freetown	1,329	606,490	7	199	120	264	6	20	238	214	163	.75	8
Mansfield	2,765	1,079,623	13	498	-	542	4	42	343	457	401	.88	13
New Bedford	26,875	27,115,322	76	4,083	-	4,359	-	251	3,319	3,726	3,505	.92	103
Norton	1,732	826,275	7	299	145	291	5	15	152	194	140	.72	7
Raynham	1,881	872,091	10	826	215	809	4	16	201	253	225	.89	10
Rehoboth	1,891	777,810	15	312	197	367	8	41	192	288	251	.87	15
Seekonk	1,228	693,305	8	208	132	234	5	11	138	173	156	.90	8
Somerset	2,006	1,026,060	9	389	254	424	11	32	241	334	295	.88	10
Swansey	1,356	705,300	10	220	145	246	4	12	155	187	163	.87	10
Taunton	2,898	15,547,611	63	3,464	1,831	3,568	-	201	1,800	2,824	2,594	.92	77
Westport	21,213	1,371,475	21	535	317	630	19	78	350	475	385	.81	21
Totals	189,121	\$108,294,547	471	24,584	11,451	25,333	126	1,507	15,373	19,410	17,308	.89	560

SCHOOL-RETURNS.

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DUKES COUNTY.

Chilmark . . .	494	\$219,497	4	75	50	94	2	13	54	77	68	.88	4
Cottage City . . .	679	1,272,650	4	98	43	122	2	8	43	104	93	.89	4
Edgartown . . .	1,301	808,851	6	172	107	206	4	25	104	184	168	.91	7
Gay Head . . .	161	14,691	1	35	28	21	-	2	14	40	36	.90	1
Gosnold . . .	154	201,165	1	23	14	21	-	4	11	15	10	.65	1
Tisbury . . .	1,516	673,944	9	199	140	231	3	32	134	191	169	.88	9
Totals . . .	4,305	\$3,190,798	25	602	382	695	11	84	360	611	544	.89	26

BOARD OF EDUCATION.

BRISTOL COUNTY — CONTINUED.

TOWNS.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A've wages per month of male teachers in Public Schools.	A've wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	HIGH SCHOOLS.					Salary of Principal.
										No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Length. Months.	
Acushnet	4	5	3	1	\$37 31	\$30 74	54	9	-	2	5	89	Taxation,	9-15	\$2,200 00
Attleborough	8	55	18	15	84 44	37 94	336-15	8-13	-	-	-	-	-	-	-
Berkley	2	11	3	3	32 00	25 29	59-5	8-10	-	-	-	-	-	-	-
Dartmouth	3	22	4	4	36 22	23 57	166-5	8-15	-	1	1	38	Taxation,	9	600 00
Dighton	5	14	8	6	34 00	31 40	80	8	-	-	-	-	-	-	-
Easton	1	25	5	4	150 00	40 60	194-14	9-15	-	1	2	100	Part tax,	9-15	1,500 00
Fairhaven	1	18	5	3	100 00	28 00	85-10	8-11	-	1	3	103	Taxation,	9	900 00
Fall River	10	144	20	19	126 50	44 36	1,201	9-18	-	1	8	371	Taxation,	10	2,000 00
Freetown	3	9	3	1	33 00	28 00	61-5	8-15	-	-	-	-	-	-	-
Mansfield	3	12	4	3	53 23	30 84	108-3	8-6	1	1	1	42	Taxation,	9-15	700 00
New Bedford	7	108	24	24	134 30	51 74	760	10	-	1	10	250	Taxation,	10	1,700 00
Norton	3	5	4	3	35 38	35 10	61-13	8-16	-	-	-	-	-	-	-
Raynham	1	16	9	8	32 00	32 66	80	8	-	-	-	-	-	-	-
Rehoboth	4	16	-	-	29 68	29 68	105	7	-	-	-	-	-	-	-
Seekonk	-	12	2	1	-	28 25	64	8	-	-	-	-	-	-	-
Somerset	8	13	5	5	46 00	31 63	72	8	-	-	-	-	-	-	-
Swansey	2	11	3	1	30 00	27 00	80	8	1	-	-	-	-	-	-
Taunton	10	67	12	10	81 54	40 49	630	10	-	1	4	161	Taxation,	10	1,500 00
Westport	7	22	3	3	31 00	23 00	178	8	1	1	1	42	Taxation,	9	500 00
Totals	82	585	135	114	\$33 70	\$52 15	4,377-10	9-6	3	10	35	1,196	-	-	\$11,600 00

DUKES COUNTY — CONTINUED.

	3	3	-	-	\$27 00	\$21 00	24	6	-	-	-	-	-	-	-	-	-	-	-
Chilmark .	1	3	-	-	46 66	22 66	28-5	7-1	-	-	-	-	-	-	-	-	-	-	-
Cottage City	2	5	-	-	50 00	33 85	46	7-14	-	-	-	-	-	-	-	-	-	-	-
Edgartown .	1	1	-	-	32 00	16 00	6	6	-	-	-	-	-	-	-	-	-	-	-
Gay Head .	1	1	-	-	28 00	28 00	9	9	-	-	-	-	-	-	-	-	-	-	-
Gosnold .	1	1	-	-	28 00	28 00	9	9	-	-	-	-	-	-	-	-	-	-	-
Tisbury .	7	7	-	-	37 00	22 80	59	6-11	-	-	-	-	-	-	-	-	-	-	-
Totals .	15	20	-	-	\$36 44	\$25 12	172-5	6-18	-	1	2	43	-	-	-	-	-	-	\$510 00

BRISTOL COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for Schools, including board, fuel, care of teachers, wages of teachers, fires and school-rooms, 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expense of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Acushnet	\$1,600 00	\$1,600 00	\$80 00	—	\$4 75	\$2 59	—	—	\$36 26	—
Attleborough	18,107 24	19,000 00	667 25	—	32 00	84 05	\$8,500 00	\$5,000 00	450 00	—
Berkley	1,450 00	1,450 00	59 00	—	10 00	9 11	1,200 00	26 00	12 00	—
Dartmouth	5,198 86	4,500 00	151 00	—	34 00	50 00	—	398 86	65 00	—
Dighton	2,790 76	2,525 00	106 90	—	14 00	50 00	—	—	108 86	—
Easton	8,767 05	8,767 05	284 17	—	50 00	1,368 67	—	660 00	215 83	—
Fairhaven	4,794 21	4,000 00	206 40	—	21 86	357 58	—	—	486 63	—
Fall River	123,097 88	89,526 89	2,400 00	\$2,000 00	163 88	9,296 77	10,229 00	7,291 80	4,189 54	—
Freetown	2,187 75	1,800 00	96 00	—	6 00	35 00	—	160 80	89 95	—
Mansfield	4,807 16	4,500 00	160 00	—	31 50	40 86	1,400 00	—	75 00	—
New Bedford	76,670 68	71,640 00	2,250 00	2,000 00	143 00	1,322 00	15,140 77	—	1,694 20	—
Norton	2,337 31	2,000 00	90 00	—	10 00	117 31	—	—	120 00	\$27 00
Raynham	2,800 00	2,800 00	180 00	150 00	15 00	60 00	—	—	40 00	—
Rehoboth	3,414 00	3,000 00	100 00	—	37 00	—	—	364 00	50 00	—
Seekonk	1,758 22	1,700 00	81 00	—	10 00	13 67	—	—	186 01	—
Somerset	3,384 26	2,523 18	109 16	—	25 00	17 85	—	70 00	47 75	—
Swansey	2,211 41	2,120 41	76 00	—	15 00	—	—	—	10 00	—
Taunton	43,630 81	39,102 60	1,500 00	1,500 00	150 00	2,000 00	—	1,000 00	2,000 00	—
Westport	4,775 00	4,000 00	200 00	—	30 00	30 00	—	200 00	340 00	—
Totals	\$313,782 60	\$266,555 13	\$8,746 88	\$5,650 00	\$802 99	\$14,853 46	\$36,469 77	\$15,171 46	\$10,167 03	\$27 00

SCHOOL-RETURNS.

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DUKES COUNTY — CONTINUED.

Chilmark . . .	\$652 00	\$450 00	\$12 00	-	\$5 50	\$24 50	-	-	\$130 00	-
Cottage City . .	1,177 96	1,000 00	75 00	-	23 00	21 08	-	-	58 88	-
Edgartown . . .	1,788 24	1,700 00	50 00	-	16 65	17 28	-	-	49 82	-
Gay Head . . .	90 00	90 00	10 00	-	8 50	7 00	-	-	8 00	-
Gosnold . . .	80 00	80 00	30 00	-	2 50	-	-	-	9 36	-
Tisbury . . .	2,307 82	2,000 00	106 25	-	25 00	5 63	-	-	23 84	-
Totals . . .	\$6,096 02	\$5,320 00	\$313 25	-	\$31 15	\$75 49	-	-	\$35 51	-
									\$279 90	-

BRISTOL COUNTY — CONCLUDED.

TOWNS.	ACADEMIES AND PRIVATE SCHOOLS.										
	Amount of local funds the income of which can be appropriated only for the support of Schools and Academies.	Income of local funds.	Income of surplus revenue and other funds, including the dog tax, used at the option of the town.	Number.	Whole No. attending for the year.	Amount of tuition paid.	No. of Private Schools.	Whole No. attending for the year.	Estimated amount of tuition.	Town's share of school-fund payable Jan. 25, 1891.	How much of said fund was used for apparatus and books of reference.
Acushnet	-	-	\$99 21	1	-	-	1	-	-	\$219 90	-
Attleborough	\$13,700 00	\$664 03	773 43	1	25	-	-	25	\$275 00	263 83	\$65 96
Berkley	-	-	-	1	-	-	-	-	-	214 85	14 90
Dartmouth	2,000 00	90 99	272 97	-	-	-	-	-	-	201 62	-
Dighton	-	-	128 27	-	-	-	-	-	-	229 19	-
Easton	50,000 00	4,000 00	308 75	-	-	-	-	-	-	181 09	45 27
Fairhaven	5,000 00	800 00	158 52	-	-	-	2	80	495 00	193 11	-
Fall River	-	-	-	-	900	-	6	-	10,000 00	-	-
Freestown	-	-	-	-	-	-	-	-	-	221 85	-
Mansfield	1,000 00	60 00	673 66	1	8	-	1	8	144 00	197 82	50 00
New Bedford	50,000 00	3,000 00	-	1	51	\$5,200 00	21	277	3,850 00	-	-
Norton	-	-	201 72	1	58	4,560 00	2	24	225 00	227 33	28 00
Raynham	-	-	169 92	-	-	-	-	-	-	230 64	16 00
Rehoboth	-	-	262 01	-	-	-	-	-	-	229 26	-
Seekonk	-	-	174 24	-	-	-	-	-	-	222 45	7 00
Somerset	-	-	-	-	-	-	-	-	-	188 24	22 75
Swansey	-	-	-	-	-	-	-	-	-	221 74	-
Taunton	8,000 00	800 00	-	1	83	3,200 00	1	30	250 00	-	-
Westport	-	-	244 00	-	-	-	-	-	-	200 62	-
Totals	\$129,700 00	\$8,915 02	\$3,466 60	3	192	\$12,960 00	34	1,294	\$15,239 00	\$3,443 54	\$249 88

SCHOOL-RETURNS.

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DUKES COUNTY — CONCLUDED.

Chilmark	-	-	\$17 82	-	-	-	-	-	-	\$205 95	-
Cottage City	-	-	-	-	-	-	-	-	-	-	-
Edgartown	-	-	-	-	-	-	-	-	-	225 56	-
Gay Head	-	-	-	-	-	-	-	-	-	202 54	-
Gosnold	-	-	18 00	-	-	-	-	-	-	202 44	-
Tisbury	-	-	-	1	60	\$200 00	-	-	-	219 52	\$3 68
Totals	-	-	\$35 32	1	60	\$200 00	-	-	-	\$1,056 01	\$3 68

ESSEX COUNTY.

TOWNS.	Population - State Census, 1880.	Valuation - 1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 8 and 14 years of age.	No. of different pupils of all ages in the Pub- lic Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 8 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attend- ance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Amesbury	3,355	\$1,231,371	18	545	385	639	2	42	385	576	495	.86	18
Andover	5,171	3,239,906	21	884	496	902	12	86	473	741	676	.91	25
Beverly	8,445	8,613,650	30	1,441	867	1,407	1	100	846	1,375	1,102	.80	34
Boxford	824	589,675	5	135	89	131	1	7	77	98	81	.82	5
Bradford	2,643	1,179,375	8	426	227	455	5	68	216	347	314	.90	10
Danvers	6,636	8,564,485	21	1,041	720	1,263	15	74	808	1,056	925	.87	27
Essex	1,670	842,505	9	269	197	288	4	24	197	275	236	.86	9
Georgetown	2,231	1,086,967	11	407	305	426	10	47	242	396	334	.85	11
Gloucester	19,329	8,977,559	75	4,008	2,487	3,099	1	306	2,315	3,403	3,154	.93	87
Groveland	2,227	865,007	9	432	262	452	1	28	264	342	305	.89	9
Hamilton	935	611,985	4	115	78	103	2	13	79	83	64	.77	4
Haverhill	18,475	10,787,088	67	3,500	2,300	3,405	6	232	1,945	2,944	2,492	.84	74
Ipswich	3,699	1,899,530	16	551	448	657	-	87	448	548	475	.87	19
Lawrence	39,178	25,349,410	98	6,865	-	6,301	28	356	3,724	4,731	4,480	.94	106
Lynn	38,284	24,992,084	112	6,229	2,450	6,299	-	334	2,607	6,466	4,730	.87	114
Lynnfield	686	559,130	3	108	76	113	-	2	76	92	76	.82	3
Manchester	1,640	3,398,375	7	259	161	303	-	23	171	243	220	.90	7
Marblehead	7,467	3,660,600	19	1,407	825	1,286	-	16	754	1,247	1,086	.87	27
Merrimac	2,237	1,099,746	11	384	254	430	4	26	263	374	335	.89	12
Methuen	4,392	2,552,062	16	667	396	653	7	61	396	578	513	.89	19
Middleton	1,000	518,931	5	159	102	183	4	15	113	138	122	.88	5
Nahant	808	4,694,277	4	111	66	120	-	14	66	104	92	.90	4
Newbury	1,566	829,845	7	279	162	277	15	22	153	240	195	.80	7

SCHOOL-RETURNS.

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Newburyport.	13,537	7,535,456	37	2,486	1,381	2,106	-	60	1,157	1,722	1,475	.85	47
North Andover	3,217	2,221,065	14	588	326	615	4	53	317	482	412	.85	15
Peabody	9,028	6,813,800	22	1,714	1,017	1,669	2	94	1,002	1,529	1,293	.84	37
Rockport	3,912	1,980,847	12	792	515	755	-	70	492	655	553	.86	11
Rowley	1,201	505,218	6	173	91	166	5	10	75	157	137	.87	6
Salem	27,598	23,767,679	82	4,802	2,983	4,491	-	377	2,887	3,320	2,784	.83	89
Salisbury	4,079	1,829,835	19	677	414	751	9	80	438	676	573	.85	20
Saugus	2,626	1,428,962	12	484	296	486	3	25	305	447	438	.96	13
Swampscott	2,501	2,928,239	10	342	-	386	2	37	303	379	336	.88	11
Topsfield	1,165	718,741	5	172	90	168	4	11	83	124	104	.84	5
Wenham	889	536,825	5	155	134	166	3	8	131	138	125	.91	5
West Newbury	1,989	1,001,093	11	341	196	355	5	22	193	293	256	.87	11
Totals	244,640	\$162,413,423	811	48,028	20,796	42,206	155	2,830	24,001	35,319	30,988	.88	906

BOARD OF EDUCATION.

ESSEX COUNTY — CONTINUED.

TOWNS.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A's wages per month in Public Schools.	A's wages per month in Public Schools.	A's wages per month in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Length. Months.	Salary of Principal.
Amesbury .	4	19	4	4	\$72 50	\$26 00	150-8	8-7	8-7	-	1	1	49	Taxation,	9-8	\$752 00
Andover .	1	26	2	4	210 00	39 66	193-10	9-4	9-4	-	1	3	88	Not by tax,	9-10	2,000 00
Beverly .	2	32	6	6	87 50	37 28	296	9-16	9-16	-	1	4	138	Taxation,	10	1,250 00
Boxford .	3	6	3	3	36 50	31 20	41-18	8-7	8-7	-	1	-	-	-	-	-
Bradford .	1	10	-	-	150 00	38 64	73-6	9-3	9-3	-	1	2	50	Taxation,	9-7	1,850 00
Danvers .	6	25	5	5	93 99	31 72	197-3	9-8	9-8	-	1	2	89	Taxation,	10	1,200 00
Essex .	2	8	3	3	61 00	30 00	76-10	8-10	8-10	-	1	-	-	-	-	-
Georgetown .	1	10	2	2	105 00	40 00	98-15	9	9	-	1	2	66	Taxation,	9	950 00
Gloucester .	4	90	1	1	143 33	36 04	749	10	10	-	1	5	145	Taxation,	10	1,800 00
Groeland .	1	11	-	-	75 00	32 00	84	9-6	9-6	-	1	1	50	Taxation,	10	750 00
Hamilton .	-	4	3	3	-	31 00	33	8-5	8-5	-	1	-	-	-	-	-
Haverhill .	5	69	3	3	142 85	52 96	699	9-14	9-14	-	1	6	156	Taxation,	9	1,800 00
Ipswich .	2	18	2	-	125 00	28 00	155	9-14	9-14	-	1	2	51	Part tax,	10	1,500 00
Lawrence .	7	184	15	15	145 00	50 50	980	10	10	-	1	8	197	Taxation,	10	2,320 00
Lynn .	8	106	53	36	135 00	51 00	1,136-16	10-3	10-3	-	1	6	265	Taxation,	10-5	1,700 00
Lynnfield .	-	3	2	2	-	29 34	25-15	8-7	8-7	-	1	-	-	-	-	-
Manchester .	1	11	6	6	78 94	30	64-9	9-4	9-4	1	1	1	39	Taxation,	9-15	750 00
Marblehead .	2	25	6	2	107 60	38 09	225-10	10-5	10-5	-	1	2	91	Taxation,	10-5	1,004 50
Merrimac .	3	11	2	2	63 00	31 00	82-4	7-9	7-9	-	1	2	78	Taxation,	9-10	950 00
Methuen .	3	23	8	6	68 52	36 54	143	8-19	8-19	-	1	2	88	Taxation,	9	1,100 00
Middleton .	-	6	6	5	-	33 77	45	9	9	-	1	-	-	-	-	-
Nahant .	2	3	3	2	120 00	56 00	40	10	10	-	1	1	18	Taxation,	10	1,200 00
Newbury .	-	7	2	2	-	26 60	62-10	9	9	-	1	-	-	-	-	-

SCHOOL-RETURNS.

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	6	41	4	4	4	107 47	33 61	395-18	10-14	1	5	131	Taxation,	10-14	
	2	15	4	2	112 63	40 46	133-10	9-11	9-11	1	2	53	Taxation,	10	1,700 00
Peabody . . .	5	38	17	11	126 67	38 97	220	10	10	1	3	73	Taxation,	10	1,200 00
Rockport . . .	1	21	8	6	60 00	30 84	94-5	8-6	8-6	1	2	53	Taxation,	9	1,400 00
Rowley . . .	1	7	-	-	48 00	22 00	48-8	8-12	8-12	1	7	-	-	-	500 00
Salem . . .	6	83	56	46	181 67	53 83	866-18	10-9	10-9	1	2	176	Taxation,	10-9	2,500 00
Salisbury . . .	3	19	2	-	80 00	29 06	155-10	8-4	8-4	1	2	63	Taxation,	9	900 00
Saugus . . .	1	14	5	4	80 00	35 00	112-16	9-10	9-10	1	2	42	Taxation,	9-10	754 00
Swampscott . . .	1	12	8	5	100 00	43 33	100	10	10	1	1	33	Taxation,	10	1,000 00
Topsfield . . .	-	7	2	1	-	33 00	42-10	8-10	8-10	-	-	-	-	-	-
Wenham . . .	-	5	2	2	-	34 20	45	9	9	-	-	-	-	-	-
West Newbury . . .	3	11	-	-	51 25	28 36	88	8	8	1	1	38	Taxation,	8	500 00
Totals . . .	87	930	254	219	\$110 73	\$41 82	7,945-9	9-16	9-16	26	75	2,270	-	-	\$32,830 50

ESSEX COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for schools, including wages of teachers, board, fuel, care of trees and school-rooms, for the school-year 1890-91.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expense of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Amesbury	\$6,000 00	\$5,299 93	\$150 00	\$2,000 00	\$40 00	\$400 00	—	—	\$423 14	—
Andover	10,506 29	9,500 00	430 00	—	50 00	116 75	—	—	410 54	—
Beverly	19,561 47	15,469 08	64 00	—	55 00	1,286 15	\$1,765 66	—	921 58	—
Boxford	1,635 40	1,000 00	257 35	—	25 00	85 47	—	\$118 07	182 21	—
Bradford	5,199 47	4,800 00	150 00	—	15 00	93 46	—	—	158 21	—
Danvers	13,400 00	12,300 00	500 00	—	55 00	325 00	—	400 00	800 00	—
Essex	3,053 15	2,400 00	195 00	—	26 25	74 06	—	—	132 30	—
Georgetown	4,764 56	4,800 00	190 00	—	50 00	8 25	—	—	75 74	—
Gloucester	68,445 02	38,587 00	2,000 00	\$2,000 00	187 10	2,786 52	20,000 00	—	4,000 00	\$1,200 00
Groveland	4,356 79	3,000 00	125 00	—	14 75	38 31	1,915 57	215 00	241 81	—
Hamilton	887 25	800 00	45 00	—	9 25	6 00	—	—	27 00	—
Haverhill	71,897 10	45,000 00	907 81	—	70 80	2,208 41	24,000 00	152 11	1,827 18	—
Ipswich	6,100 00	6,100 00	225 00	—	25 00	321 13	—	—	235 40	—
Lawrence	84,663 14	65,882 26	2,026 67	2,026 67	195 00	3,770 87	10,000 00	4,000 00	1,000 00	—
Lynn	81,303 34	67,623 58	2,305 75	2,000 00	306 38	3,575 28	6,652 18	1,621 50	3,121 15	—
Lynnfield	600 00	600 00	60 00	—	—	—	—	—	—	—
Manchester	3,341 28	2,800 00	200 00	—	25 00	108 63	—	433 72	—	—
Marblehead	21,471 28	13,087 59	—	—	30 00	1,844 45	7,732 50	—	502 48	—
Merrimac	4,224 92	4,200 00	150 00	—	24 00	50 00	—	38 00	240 00	—
Methuen	8,664 05	8,700 00	300 00	—	44 85	518 20	—	212 55	309 47	—
Middleton	1,496 99	1,150 00	78 00	—	13 00	265 48	—	—	38 96	—
Nahant	4,679 85	4,679 85	275 00	—	81 00	257 94	—	283 00	121 59	—
Newbury	1,750 00	1,700 00	58 00	—	25 00	30 00	—	—	15 00	—

SCHOOL-RETURNS.

xxiii

Newburyport .	23,540 23	23,500 00	200 00	-	75 00	350 00	-	-	1,000 00	-
North Andover,	9,119 47	8,000 00	275 00	-	49 50	118 09	-	-	376 88	-
Peabody .	22,619 38	20,719 19	371 00	-	155 00	590 24	-	-	1,311 95	-
Rockport .	6,395 54	4,958 00	300 00	-	32 00	98 73	-	-	710 50	-
Rowley .	2,940 00	1,400 00	75 00	-	15 00	25 00	1,500 00	-	40 00	-
Salem .	82,914 99	69,400 84	2,500 00	2,500 00	148 03	1,900 45	6,725 45	7,522 81	2,729 81	-
Salisbury .	8,125 45	6,500 00	250 00	-	40 00	119 07	-	131 30	1,085 08	-
Saugus .	5,650 00	5,500 00	180 00	-	50 00	-	-	100 00	50 00	-
Swampscott .	6,554 47	6,500 00	195 00	-	21 50	284 36	-	179 55	400 77	-
Topsfield .	1,524 20	1,400 00	75 00	75 00	10 44	-	-	-	19 10	-
Wenham .	1,445 00	1,400 00	81 00	-	17 00	20 00	-	-	25 00	-
West Newbury,	3,230 43	2,899 11	126 50	-	37 00	-	-	-	214 14	-
Totals .	\$602,061 51	\$471,656 43	\$15,301 08	\$8,601 67	\$2,017 85	\$21,626 30	\$80,291 36	\$15,707 61	\$22,246 99	\$1,200 00

BOARD OF EDUCATION.

ESSEX COUNTY — CONCLUDED.

TOWNS.	Amount of local funds the income of which can be appropriated only for the support of Schools and Academies.	Income of local funds.	Income or surplus revenue and other funds, including the dog tax, used at the option of the town.	ACADEMIES AND PRIVATE SCHOOLS.							
				Number of Academies.	Whole No. attending for the year.	Amount of tuition paid.	No. of Private Schools.	Whole No. attending for the year.	Estimated amount of tuition.	Town's share of school-fund payable Jan. 25, 1881.	How much of said fund was used for apparatus and books of reference.
Amesbury	\$289,668 28	-	\$123 63	2	-	\$18,989 00	1	19	\$40 00	\$208 94	\$30 00
Andover	3,000 00	\$14,483 40	-	1	308	-	2	36	700 00	180 58	-
Beverly	2,487 93	128 67	313 23	1	-	-	2	50	500 00	135 43	-
Boxford	-	-	54 48	1	190	7,066 00	1	19	200 00	212 48	-
Bradford	-	-	-	1	-	-	2	20	400 00	186 20	-
Danvers	-	-	291 07	-	-	-	-	-	-	205 38	-
Essex	-	-	-	-	-	-	-	-	-	230 66	-
Georgetown	-	-	208 27	-	-	-	2	85	1,200 00	190 49	-
Gloucester	-	-	484 33	-	-	-	-	-	-	395 19	-
Groveland	-	-	66 99	-	-	-	-	-	-	240 19	-
Hamilton	-	-	-	-	-	-	-	-	-	210 34	-
Haverhill	-	-	-	-	-	-	2	70	1,050 00	268 08	-
Ipswich	33,450 00	2,250 00	194 04	-	-	-	-	-	-	204 14	-
Lawrence	-	-	-	-	-	-	*	-	-	-	-
Lynn	-	-	-	-	-	-	5	130	2,000 00	-	-
Lynnfield	-	-	-	-	-	-	-	-	-	211 51	-
Manchester	-	-	-	-	-	-	-	-	-	173 03	-
Marblehead	-	-	330 97	1	-	-	2	45	500 00	242 28	-
Merrimac	-	-	91 11	-	-	-	-	-	-	185 82	50 00
Methuen	-	-	-	-	-	-	1	6	108 00	211 44	-
Middleton	-	-	63 04	-	-	-	-	-	-	217 45	-
Nahant	-	-	-	1	33	-	-	-	-	110 24	43 40
Newbury	20,000 00	1,200 00	40 00	1	-	200 00	-	-	-	226 65	-

SCHOOL-RETURNS.

xxv.

Newburyport .	65,000 00	3,900 00	-	1	108	-	4	105	3,000 00	239 05	-
North Andover .	-	-	-	-	-	-	1	7	200 00	203 48	-
Peabody .	6,000 00	360 00	854 84	-	-	-	2	30	700 00	168 78	-
Rockport .	-	-	-	-	-	-	1	10	125 00	226 46	-
Rowley .	-	-	-	-	-	-	-	-	-	224 87	-
Salem .	5,425 00	325 50	1,252 15	-	-	-	15	1,210	10,000 00	-	-
Salisbury .	-	-	146 77	-	-	-	-	-	-	216 74	-
Saugus .	-	-	-	-	-	-	-	-	-	195 07	25 00
Swampscott .	-	-	-	-	-	-	-	-	-	188 04	-
Topsfield .	-	-	124 20	-	-	-	-	-	-	217 16	-
Wenham .	-	-	66 49	-	-	-	-	-	-	214 85	-
West Newbury .	-	-	94 06	-	-	-	1	30	30 00	234 72	-
Totals .	\$424,981 21	\$22,827 57	\$4,799 17	6	634	\$26,255 00	44	1,822	\$20,753 00	\$6,725 74	\$148 40

* 1,200 pupils in Catholic Parochial Schools.

FRANKLIN COUNTY.

TOWNS.	Population - State Census, 1880.	Valuation - 1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 8 and 14 years of age.	No. of different pupils of all ages in the Pub- lic Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 8 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year	The per cent of attend- ance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Ashfield	1,062	\$489,277	14	176	131	228	10	27	126	178	157	.88	14
Barnardston	934	377,112	6	158	121	209	-	8	120	129	119	.92	6
Buckland	1,739	493,830	9	352	229	366	14	6	229	281	237	.90	9
Charlemont	932	308,840	9	114	104	174	-	31	104	126	102	.81	9
Colrain	1,777	582,597	14	300	216	386	6	32	206	275	245	.89	14
Conway	1,760	728,407	12	275	162	303	9	34	176	242	223	.92	12
Deerfield	3,543	1,233,132	20	590	390	585	5	24	385	530	485	.90	21
Erving	872	289,300	6	155	110	182	3	11	113	152	136	.89	6
Gill	733	423,133	6	129	70	146	7	23	69	119	103	.86	6
Greenfield	3,903	2,744,372	18	710	407	762	5	78	348	646	596	.92	25
Hawley	592	150,754	8	124	114	148	2	14	88	119	99	.80	8
Heath	560	175,636	8	103	63	134	6	26	56	105	99	.94	8
Leverett	742	267,915	6	119	73	153	6	21	82	106	99	.93	6
Leyden	507	196,855	5	116	75	128	3	32	73	92	72	.78	5
Monroe	166	39,469	3	52	33	63	-	11	33	55	38	.70	5
Montague	4,876	2,478,575	21	1,145	756	1,083	9	35	604	811	707	.87	21
New Salem	869	320,260	7	132	89	148	4	9	86	108	105	.97	7
Northfield	1,603	632,677	10	259	192	305	6	18	160	220	195	.88	10
Orange	3,171	1,492,107	19	455	278	568	6	21	263	440	404	.92	20
Rowe	1,502	167,179	6	96	66	117	2	22	60	72	66	.91	6
Shelburne	1,621	800,981	10	265	174	265	1	26	180	222	200	.90	10
Shutesbury	529	161,013	7	102	71	111	9	5	68	101	94	.93	7
Sunderland	755	404,169	6	140	87	157	6	11	86	146	141	.96	6

Warwick	.	713	257,845	9	119	72	131	4	12	72	113	105	.93	9
Wendell	.	485	171,241	6	62	55	67	4	1	55	85	58	.68	6
Whately	.	1,074	471,833	6	211	181	216	5	35	-	163	133	.81	6
Totals	.	36,000	\$15,808,509	251	6,458	4,319	7,157	132	573	3,842	5,616	5,018	.89	262

HAMPDEN COUNTY.

Agawam	.	2,216	\$1,212,714	9	846	243	455	-	84	243	321	271	.84	10
Blandford	.	979	335,286	13	214	100	241	6	36	90	204	153	.75	13
Brimfield	.	1,203	476,403	7	213	130	202	5	8	125	134	113	.85	7
Chester	.	1,473	494,094	10	275	164	288	5	12	154	200	175	.88	10
Chicopee	.	11,325	5,133,560	26	2,186	1,171	1,657	8	98	832	1,009	923	.91	35
Granville	.	1,205	351,216	12	250	139	287	7	88	139	201	183	.90	12
Hampden	.	958	387,168	6	176	102	183	3	23	124	126	112	.88	6
Holland	.	302	118,548	4	63	39	70	3	5	39	53	41	.76	4
Holyoke	.	21,851	11,977,410	43	4,267	2,831	3,163	5	166	1,891	1,849	1,613	.87	49
Longmeadow	.	1,401	910,150	11	241	142	289	4	32	178	230	186	.80	11
Ludlow	.	1,526	734,657	10	330	204	351	8	16	204	214	189	.88	11
Monson	.	8,758	1,338,284	17	589	-	674	9	16	412	442	438	.99	18
Montgomery	.	303	134,604	5	65	34	64	3	8	34	61	54	.88	5
Palmer	.	5,504	2,257,517	25	1,096	868	1,119	11	60	666	872	769	.88	25
Russell	.	823	438,344	5	140	73	134	4	1	71	133	103	.77	5
Southwick	.	1,104	599,745	10	207	124	252	7	30	120	209	177	.84	10
Springfield	.	33,340	82,746,016	90	5,865	3,280	5,334	26	463	2,990	4,538	4,250	.94	114
Tolland	.	452	181,575	6	87	37	79	3	16	35	63	60	.95	6
Wales	.	1,030	401,720	6	188	107	191	2	5	134	117	104	.89	6
Westfield	.	7,587	5,936,098	31	1,334	1,000	1,648	2	151	910	1,159	1,080	.94	40
West Springfield	.	4,149	2,888,112	18	731	684	852	6	39	560	845	618	.72	19
Wilbraham	.	1,628	700,002	9	262	171	269	3	7	179	202	180	.89	9
Totals	.	104,117	\$69,758,228	373	19,125	11,643	18,302	130	1,267	10,130	13,182	11,802	.90	425

FRANKLIN COUNTY — CONTINUED.

TOWNS.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A'g'e wages per month of male teachers in Public Schools.	A'g'e wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	HIGH SCHOOLS.						Salary of Principal.
										No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Length.	Months.	
Ashfield	1	18	1	—	—	\$19 98	85-5	6-2	3	1	2	55	In part,	8-15	—	\$450 00
Barnardston	3	7	—	—	\$37 86	28 47	56-15	8-3	—	—	—	—	—	—	—	—
Buckland	4	13	—	—	26 25	23 50	70-18	7-18	2	—	—	—	—	—	—	—
Charlemont	3	12	—	—	26 65	18 77	54	6	—	—	—	—	—	—	—	—
Colrain	5	16	1	—	28 60	21 94	89-5	6-4	—	—	—	—	—	—	—	—
Conway	8	15	2	1	49 58	23 97	82-15	6-18	—	1	1	45	Taxation,	8-10	—	476 67
Deerfield	3	26	3	3	32 00	30 00	161	8-1	—	1	1	27	Taxation,	9	—	396 00
Erving	—	7	1	1	—	29 38	44-5	7-2	—	—	—	—	—	—	—	—
Gill	—	7	—	—	—	30 00	41-5	6-18	—	—	—	—	—	—	—	—
Greenfield	4	28	4	3	83 00	34 60	154-15	8-5	—	1	5	77	Taxation,	9	—	1,500 00
Hawley	—	10	—	—	17 17	48	6	6	—	—	—	—	—	—	—	—
Heath	1	9	1	1	28 00	17 62	48	7-2	—	—	—	—	—	—	—	—
Leverett	—	10	—	—	—	21 28	42-16	6-12	—	—	—	—	—	—	—	—
Leyden	2	8	—	—	28 00	22 00	83-5	6-12	1	—	—	—	—	—	—	—
Monroe	—	5	—	—	—	16 50	18	6	—	—	—	—	—	—	—	—
Montague	1	26	8	6	59 20	35 04	171-10	8-17	—	1	1	84	Taxation,	9	—	450 00
New Salem	1	10	—	—	20 00	21 64	52-10	7-10	—	—	—	—	—	—	—	—
Northfield	2	12	2	2	44 00	26 30	76-5	7-13	—	—	—	—	—	—	—	—
Orange	5	24	2	—	56 00	26 20	131-10	7	—	1	2	53	Taxation,	9-10	—	1,000 00
Rowe	1	8	—	—	29 00	16 25	39-10	6-11	—	—	—	—	—	—	—	—
Shelburne	2	11	5	5	20 00	28 00	77	7-14	1	—	—	—	—	—	—	—
Shutesbury	1	11	1	1	19 80	18 76	42	6	—	—	—	—	—	—	—	—
Sunderland	1	7	—	—	20 00	26 75	43	8	1	—	—	—	—	—	—	—

SCHOOL-RETURNS.

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Warwick	.	.	1	11	1	1	19 00	21 00	54	6	-	-	-	-	-	-
Wendell	.	.	-	9	-	-	-	19 00	36	6	-	-	-	-	-	-
Whately	.	.	-	9	-	-	-	21 40	52-10	8-15	-	1	1	30	Taxation,	78 00
Totals	.	.	43	329	34	24	\$39 18	\$25 12	1,705-19	6-16	8	7	13	321	-	\$4,350 67

HAMPDEN COUNTY — CONTINUED.

Agawam	.	.	16	5	4	4	-	\$35 00	74	8-10	-	-	-	-	-	-
Blandford	.	.	3	3	1	1	\$25 67	25 13	81-15	6-7	-	-	-	-	-	-
Brimfield	.	.	9	3	3	3	-	28 24	52-10	7	-	1	4	124	Endown't,	\$1,200 00
Chester	.	.	20	-	-	-	-	20 10	76-5	7-15	-	-	-	56}	Taxation,	1,400 00
Chicopee	.	.	38	9	7	7	113 15	38 32	249-16	9-16	-	2	{ 3	43}	-	1,300 00
Granville	.	.	17	6	5	5	22 00	24 20	76-5	6-7	-	-	-	-	-	-
Hampden	.	.	7	1	-	-	25 08	25 08	48	8	-	-	-	-	-	-
Holland	.	.	5	1	-	-	22 00	19 00	21	6	-	-	-	-	-	-
Holyoke	.	.	48	12	8	8	94 00	41 43	417-2	9-19	-	1	4	121	Taxation,	1,600 00
Longmeadow	.	.	14	2	1	1	45 32	28 52	94-18	8-13	-	-	-	-	-	-
Ludlow	.	.	14	2	1	1	-	26 00	80-10	8-1	-	-	-	-	-	-
Monson	.	.	19	1	-	-	31 43	28 94	139-13	7-15	-	1	3	60	Taxation,	1,200 00
Montgomery	.	.	7	1	-	-	-	20 00	30	6	-	1	1	41	Taxation,	1,000 00
Palmer	.	.	26	1	-	-	45 00	32 00	210	8-8	-	-	-	-	-	-
Russell	.	.	5	1	1	1	-	25 10	34	6-16	-	-	-	-	-	-
Southwick	.	.	14	2	1	1	40 00	22 00	88-10	8-10	-	1	9	405	Taxation,	2,600 00
Springfield	.	.	110	29	21	21	168 00	51 50	900	10	-	-	-	-	-	-
Tolland	.	.	1	1	1	1	30 00	20 50	40	6-13	1	-	-	-	-	-
Wales	.	.	7	1	-	-	30 00	20 50	45	7-10	-	-	-	-	-	-
Westfield	.	.	49	33	23	23	100 00	32 00	280	8-19	-	1	5	180	Taxation,	1,600 00
West Springfield,	.	.	24	8	6	6	100 00	63 62	163	9	-	1	2	52	Taxation,	1,000 00
Wilbraham.	.	.	13	-	-	-	28 80	28 13	72	8	-	-	-	-	-	-
Totals	.	.	491	119	83	83	\$72 66	\$36 68	3,274-4	8-16	1	9	33	1,082	-	\$12,900 00

BOARD OF EDUCATION.

FRANKLIN COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for schools, including wages of teachers, board, fuel, care of fires and school-rooms, for the school-year 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expenses of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Ashfield .	\$1,764 39	\$1,600 00	\$100 25	—	\$20 00	\$12 00	—	—	\$15 00	\$169 50
Barnardston	901 40	683 00	66 50	—	11 50	5 50	—	—	218 40	50 00
Buckland	2,526 73	1,600 00	118 75	—	23 00	326 40	—	\$458 58	—	—
Charlemont	1,355 70	1,100 00	55 00	—	10 00	—	—	—	10 00	—
Colrain .	2,000 00	2,000 00	101 00	—	11 00	25 20	—	—	53 23	85 00
Conway .	2,787 75	2,300 00	102 75	—	10 00	125 50	\$175 00	—	74 58	80 00
Deerfield .	5,909 37	4,500 00	250 00	—	25 00	150 00	—	475 00	800 00	—
Erving .	1,200 00	1,200 00	43 95	—	20 00	13 90	—	—	—	—
Gill .	840 00	800 00	34 00	—	6 00	—	—	648 85	1,096 13	132 00
Greenfield	11,382 12	8,700 00	300 00	—	15 23	201 87	—	—	—	—
Hawley .	740 49	1,000 00	30 50	—	10 00	98 29	—	—	—	—
Heath .	688 03	700 00	37 00	—	9 00	1 00	—	—	—	—
Leverett .	800 00	800 00	39 00	—	10 00	—	—	—	—	—
Leyden .	657 00	600 00	45 00	—	—	2 00	—	—	10 00	—
Monroe .	336 80	200 00	12 00	—	5 00	1 40	—	—	6 30	—
Montague	9,133 17	8,000 00	300 00	—	17 50	326 43	—	160 00	303 53	—
New Salem	1,278 26	1,100 00	41 75	—	6 00	9 63	—	300 00	85 00	—
Northfield	2,000 00	2,000 00	78 75	—	7 00	—	4,300 00	—	15 00	—
Orange .	5,109 00	5,200 00	205 00	—	37 00	20 00	—	549 55	15 00	—
Rowe .	650 00	650 00	31 00	—	10 00	—	—	—	10 00	—
Shelburne	3,000 00	3,000 00	141 50	—	18 00	286 35	—	42 80	22 20	—
Shutesbury	852 84	600 00	39 50	—	8 00	—	—	—	—	—
Sunderland	1,166 50	1,150 00	55 00	—	8 00	34 08	—	65 00	13 76	—

SCHOOL-RETURNS.

xxx

Warwick .	1,152 94	950 00	65 00	-	17 90	-	-	-	-	-
Wendell .	720 53	600 00	30 00	-	3 00	-	-	-	-	12 00
Whately .	1,350 00	1,350 00	60 00	-	-	-	-	-	194 46	-
Totals .	\$60,303 02	\$52,383 00	\$2,383 20	-	\$313 13	\$1,639 55	\$4,475 00	\$2,894 24	\$2,273 13	\$528 50

HAMPDEN COUNTY — CONTINUED.

Agawam .	\$3,180 15	\$3,000 00	\$120 00	-	\$10 00	\$32 00	-	\$45 00	\$25 00	-
Blandford .	1,200 00	1,440 62	36 00	-	15 00	20 30	-	-	91 75	\$636 70
Brimfield .	1,450 00	1,400 00	66 50	-	15 00	15 00	-	-	51 31	-
Chester .	1,869 34	1,400 00	99 50	-	10 00	26 63	-	325 00	8 21	-
Chicopee .	29,500 75	20,675 00	1,600 00	\$1,600 00	47 00	1,503 03	-	5,679 90	994 07	-
Granville .	1,785 44	1,600 00	61 12	-	10 00	6 60	\$600 00	209 00	-	63 00
Hampden .	1,247 67	1,100 00	58 00	-	17 00	7 42	-	-	67 25	-
Holland .	229 21	200 00	17 00	-	-	-	-	-	18 00	-
Holyoke .	45,495 19	33,000 00	1,660 00	1,660 00	155 50	3,469 79	7,147 96	891 64	528 36	-
Longmeadow .	8,473 69	2,950 00	181 29	-	28 00	77 68	-	-	261 19	-
Ludlow .	2,415 53	2,000 00	90 00	-	-	-	-	-	25 00	-
Monson .	5,900 81	5,428 47	158 05	-	-	95 10	944 33	1,076 96	110 46	-
Montgomery .	425 00	425 00	20 50	-	5 00	-	-	-	-	-
Palmer .	13,020 25	9,000 00	342 00	-	35 00	70 00	2,033 61	1,026 07	353 31	-
Russell .	825 05	500 00	30 00	-	10 00	38 44	984 00	-	37 16	-
Southwick .	1,031 30	900 00	110 00	-	8 00	57 22	-	-	200 00	-
Springfield .	91,760 70	82,000 00	3,000 00	3,000 00	56 14	2,565 03	1,209 82	-	7,497 14	-
Tolland .	500 00	500 00	33 00	-	-	-	-	-	-	97 00
Wales .	1,055 50	800 00	59 25	-	3 00	4 19	-	20 00	15 08	-
Westfield .	18,983 36	17,259 68	550 00	-	10 00	525 70	-	150 00	969 65	-
W. Springfield,	7,400 00	7,241 78	200 00	-	-	-	-	858 72	500 00	-
Wilbraham .	2,934 85	1,839 82	147 49	-	22 00	11 10	895 30	-	18 64	-
Totals .	\$236,683 29	\$194,660 37	\$8,637 70	\$6,260 00	\$456 64	\$8,525 23	\$13,815 02	\$10,282 29	\$11,771 58	\$796 70

FRANKLIN COUNTY — CONCLUDED.

TOWNS.	ACADEMIES AND PRIVATE SCHOOLS.										
	Amount of local funds the income of which can be appropriated only for the support of Schools and Academies.	Income of local funds.	Income of surplus revenue and other funds, including the dog tax, used at the option of the town.	Number of Academies.	Whole No. attending for the year.	Amount of tuition paid.	No. of Private Schools.	Whole No. attending for the year.	Estimated amount of tuition.	Town's share of school fund payable Jan. 25, 1881.	How much of said fund was used for apparatus and books of reference.
Ashfield	\$938 00	\$56 00	\$44 00	1	30	\$300 00	1	30	-	\$217 37	-
Barnardston	10,716 67	1,272 00	79 80	-	-	-	-	-	-	216 09	-
Buckland	914 88	54 89	86 10	-	-	-	-	-	-	284 16	-
Charlemont	800 00	48 00	51 70	-	-	-	-	-	-	212 59	-
Colrain.	-	-	66 00	-	-	-	1	25	\$75 00	229 35	-
Conway	-	-	79 00	-	-	-	2	16	344 00	225 98	\$17 00
Deerfield	50,000 00	8,000 00	121 50	1	85	-	-	-	-	205 41	25 00
Erving	900 00	36 00	25 50	-	-	-	-	-	-	214 73	-
Gill	-	-	-	-	-	-	-	-	-	211 89	-
Greenfield	-	-	-	-	-	-	1	35	1,230 00	215 07	31 94
Hawley	400 00	24 00	-	-	-	-	-	-	-	212 30	-
Heath.	-	-	-	-	-	-	1	17	68 00	209 27	-
Leverett	-	-	53 00	-	-	-	-	-	-	211 12	43 88
Leyden.	-	-	-	-	-	-	-	-	-	209 75	-
Monroe	-	-	-	-	-	-	-	-	-	205 47	-
Montague	-	-	-	-	-	-	2	42	375 00	230 58	60 00
New Salem	6,500 00	325 00	27 55	1	63	375 00	-	-	-	213 74	-
Northfield	400 00	18 00	404 49	-	-	-	1	120	2,520 00	225 85	-
Orange.	-	-	-	-	-	-	-	-	-	194 20	-
Rowe.	200 00	12 00	36 15	-	-	-	-	-	-	209 38	-
Shelburne	-	-	137 78	1	94	426 25	-	-	-	225 07	-
Shutesbury	280 00	14 00	25 81	-	-	-	-	-	-	209 85	-
Sunderland	-	-	-	-	-	-	-	-	-	215 50	-

SCHOOL-RETURNS.

xxxiii

Warwick	.	500 00	30 00	-	-	-	-	-	212 58	-
Wendell	.	550 00	32 00	26 95	-	-	-	-	209 08	-
Whately	.	-	-	-	-	-	-	-	220 59	-
Totals	.	\$73,094 50	\$4,921 89	\$1,265 33	4	272	\$1,101 25	8	\$4,612 00	\$5,596 97 \$177 82

HAMPDEN COUNTY — CONCLUDED.

Agawam	.	-	-	\$64 98	-	-	-	-	-	\$180 15	-
Blandford	.	\$3,000 00	\$180 00	-	1	-	-	-	-	221 96	\$8 57
Brinfield	.	67,000 00	4,000 00	-	-	-	-	-	-	221 57	-
Chester	.	500 00	23 77	87 60	-	-	-	2	\$300 00	227 54	-
Chicopee	.	-	-	-	-	-	-	5	860 00	305 30	-
Granville	.	-	-	66 43	-	-	-	-	-	225 95	12 60
Hampden	.	222 22	13 33	80 38	-	-	-	-	-	225 86	-
Holland	.	-	-	15 88	-	-	-	-	-	217 86	-
Holyoke	.	-	-	436 05	-	-	-	-	-	206 34	-
Longmeadow	.	731 00	43 86	163 89	-	-	-	17	6,000 00	-	-
Ludlow	.	-	-	117 48	-	-	-	1	120 00	225 56	-
Monson	.	25,000 00	1,500 00	240 19	-	75	\$1,100 00	-	-	230 94	9 00
Montgomery	.	-	-	-	1	-	-	-	-	206 98	-
Palmer	.	850 00	84 00	218 00	-	-	-	-	-	205 57	241 61
Russell	.	-	-	39 95	-	-	-	-	-	215 52	-
Southwick	.	15,618 03	937 08	78 99	-	-	-	-	-	212 10	-
Springfield	.	-	-	-	-	-	-	-	-	220 68	-
Tolland	.	-	-	-	-	-	-	8	6,000 00	-	-
Wales	.	-	-	51 50	-	-	-	-	-	207 62	-
Westfield	.	84,451 34	4,225 56	442 82	-	-	-	-	-	217 95	-
West Springfield	.	14,000 00	950 00	226 23	-	-	-	2	700 00	139 50	20 00
Wilbraham	.	1,308 34	78 50	112 86	1	277	9,057 38	2	-	222 09	-
Totals	.	\$212,680 92	\$11,986 10	\$2,443 23	3	352	\$10,157 38	38	\$14,037 37	225 76	36 00
										\$4,366 94	\$327 78

HAMPSHIRE COUNTY.

TOWNS.	Population - State Census, 1880.	Valuation - 1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 8 and 14 years of age.	No. of different pupils of all ages in the Pub- lic Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 8 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in during the school-year.	The per cent of attend- ance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Amherst	4,299	\$2,835,151	19	695	394	815	5	130	437	686	608	.95	21
Belchertown	2,346	880,175	19	470	327	547	16	49	283	404	360	.89	19
Chesterfield	769	300,249	9	135	100	156	6	22	100	118	106	.90	9
Cummington	881	355,122	9	185	123	187	3	8	102	147	126	.85	9
Easthampton	4,206	2,261,447	19	851	527	870	8	61	497	688	596	.86	20
Enfield	1,043	690,670	7	172	111	178	6	15	102	149	138	.92	7
Goshen	327	138,940	4	74	51	77	2	4	51	53	42	.79	4
Granby	753	427,071	9	133	87	160	9	14	69	140	123	.88	9
Greenwich	684	272,531	7	116	85	128	3	7	83	106	94	.88	7
Hadley	1,938	1,226,517	13	378	208	442	4	9	248	352	324	.92	13
Hatfield	1,495	1,036,746	7	305	197	901	5	5	197	278	222	.79	7
Huntington	1,236	478,354	8	191	112	239	15	25	118	160	147	.92	8
Middlefield	648	322,075	8	155	101	171	6	13	98	132	112	.85	8
Norhampton	12,172	7,851,668	49	2,089	1,269	2,176	6	141	1,245	1,811	1,656	.91	54
Pelham	614	172,222	4	122	75	114	4	15	72	89	69	.71	4
Plainfield	457	146,080	5	58	35	65	4	6	35	60	55	.92	5
Prescott	460	191,410	5	88	61	118	1	27	61	90	83	.92	5
South Hadley	3,538	1,649,283	16	709	550	823	5	70	530	623	558	.89	18
Southampton	1,046	480,440	8	200	133	200	1	30	126	149	143	.95	8
Ware	4,817	2,034,704	21	995	604	909	10	47	585	685	623	.91	23
Westhampton	564	252,209	5	131	75	139	1	15	93	87	79	.91	5

SCHOOL-RETURNS.

xxxv

Williamsburg .	2,234	949,930	15	404	299	456	4	33	265	381	295	74	14
Worthington .	758	321,750	11	129	98	152	5	13	93	122	104	85	11
Totals .	47,235	\$25,285,744	277	8,785	5,622	9,423	129	759	5,485	7,460	6,663	89	288

HAMPSHIRE COUNTY — CONTINUED.

TOWNS.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A'v'ge wages per month of male teachers in Public Schools.	A'v'ge wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	HIGH SCHOOLS.					No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Length. Months.	Salary of Principal.
Amherst .	1	25	2	2	\$106 00	\$31 24	157-5	8-8	-	1	3	80	Taxation,	9	1	3	80	Taxation,	9	\$960 00
Belchertown .	10	18	1	1	31 54	22 07	153	8-1	-	1	1	41	Taxation,	9	1	1	41	Taxation,	9	450 00
Chesterfield .	4	12	2	2	28 33	21 50	60-2	6-13	-	-	-	-	-	-	-	-	-	-	-	-
Cummington .	1	12	2	2	24 00	22 00	62-10	6-9	-	-	-	-	-	-	-	-	-	-	-	-
Easthampton .	-	26	4	4	-	33 42	166-5	8-15	-	1	1	55	Taxation,	10	1	1	55	Taxation,	10	700 00
Enfield .	-	8	-	-	-	23 50	54-15	7-17	-	-	-	-	-	-	-	-	-	-	-	-
Goshen .	3	5	-	-	20 00	18 40	25-10	6-3	-	-	-	-	-	-	-	-	-	-	-	-
Granby .	3	12	4	2	22 00	22 00	62-10	6-18	-	1	1	41	Taxation,	9	1	1	41	Taxation,	9	600 00
Greenwich .	2	5	-	-	20 00	20 00	47	6-7	-	-	-	-	-	-	-	-	-	-	-	-
Hadley .	-	18	4	4	-	25 89	100-10	7-14	-	1	2	53	Not by tax,	8-10	-	2	53	Not by tax,	8-10	637 50
Hatfield .	2	12	2	2	24 40	21 56	65-10	8-4	-	-	-	-	-	-	-	-	-	-	-	-
Huntington .	-	8	2	2	22 05	21 30	47-15	6-16	-	-	-	-	-	-	-	-	-	-	-	-
Middlefield .	3	8	1	10	22 05	21 30	47-15	6-16	-	-	-	-	-	-	-	-	-	-	-	-
Northampton .	6	66	10	10	86 50	92 00	407-5	8-7	1	1	4	149	Taxation,	10	1	4	149	Taxation,	10	1,600 00
Pelham .	1	6	-	-	20 00	20 00	30	7-10	-	-	-	-	-	-	-	-	-	-	-	-
Plainfield .	1	5	-	-	18 00	17 89	30	6	-	-	-	-	-	-	-	-	-	-	-	-
Prescott .	2	7	1	1	28 00	21 83	30	6	-	-	-	-	-	-	-	-	-	-	-	-
South Hadley .	7	16	3	3	68 58	32 33	148	9-5	-	-	4	88	Taxation,	9-5	2	4	88	Taxation,	9-5	1,157 01
Southampton .	1	14	2	2	24 00	23 00	62-15	7-17	-	-	1	33	Taxation,	9-5	1	1	33	Taxation,	9-5	682 06
Ware .	6	22	4	4	59 88	31 92	137-10	6-3	2	1	2	54	Taxation,	9-5	1	2	54	Taxation,	9-5	216 00
Westhampton .	2	7	1	1	20 00	18 84	35-10	7-2	-	-	-	-	-	-	-	-	-	-	-	-

	2	18	2	2	2	34 72	26 28	119-15	7-19	1	1	2	71	Taxation,	{ 9 8-5	432 00
Williamsburg .																357 50
Worthington .	-	15	2	2	2	-	24 91	70-9	6-15	1	-	-	-	-	-	-
Totals .	57	345	50	44	44	\$42 55	\$26 85	2137-17	7-14	5	11	21	665	-	-	\$8,792 07

HAMPSHIRE COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for schools, including wages of teachers, board, fuel, care of fires and school-rooms, 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expense of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Amherst .	\$9,018 10	\$6,996 17	\$500 00	—	\$10 00	—	\$1,388 00	\$1,150 41	\$204 09	—
Belchertown .	4,483 46	3,500 00	168 00	—	23 00	\$61 83	—	421 76	60 58	—
Chesterfield .	985 50	900 00	50 50	—	10 00	10 00	—	—	15 00	\$137 12
Cummington .	1,067 08	900 00	57 75	—	10 00	14 72	—	—	—	400 00
Easthampton .	8,500 00	6,600 00	180 00	—	18 00	500 00	800 00	—	433 93	—
Enfield .	2,166 00	1,400 00	77 00	—	17 00	56 00	—	416 00	—	—
Goshen .	677 40	300 00	28 50	—	4 00	2 00	303 27	—	74 13	110 00
Granby .	1,686 00	1,000 00	86 00	—	15 00	7 00	—	—	46 00	—
Greenwich .	1,025 06	1,025 06	65 00	—	—	29 46	—	144 94	—	—
Hadley .	3,753 35	2,750 00	117 50	—	7 20	—	—	—	878 55	—
Hatfield .	1,500 00	1,500 00	87 50	—	—	24 82	—	—	86 62	—
Huntington .	2,313 64	1,300 00	129 25	—	8 00	27 18	—	407 44	60 56	—
Middlefield .	800 00	800 00	52 00	—	8 00	9 00	—	—	10 00	—
Northampton .	22,000 00	19,600 00	1,000 00	\$1,000 00	65 26	369 18	—	870 20	1,160 18	—
Pelham .	650 00	650 00	53 25	—	15 00	20 60	—	29 02	—	—
Plainfield .	709 21	400 00	23 60	—	6 30	50	284 55	50	3 86	—
Prescott .	554 00	500 00	30 00	—	12 00	—	—	—	12 00	—
South Hadley .	8,399 29	7,881 83	145 00	—	45 60	280 61	—	401 83	26 25	—
Southampton .	1,250 00	1,250 00	36 00	—	10 00	—	—	—	—	—
Ware .	11,304 78	7,000 00	310 70	—	50 00	170 84	—	—	458 08	—
Westhampton .	1,031 78	800 00	61 58	—	—	97 57	—	24 35	48 28	—

SCHOOL-RETURNS.

xxxix

Williamsburg .	2,500 00	2,500 00	49 00	-	12 00	76 43	-	-	56 70	35 00
Worthington .	835 00	700 00	56 00	-	10 00	-	-	75 00	-	495 00
Totals .	\$87,209 65	\$70,853 12	\$3,364 13	\$1,000 00	\$356 36	\$1,957 74	\$6,090 98	\$3,941 45	\$3,634 81	\$1,177 12

BOARD OF EDUCATION.

HAMPSHIRE COUNTY — CONCLUDED.

TOWNS.	ACADEMIES AND PRIVATE SCHOOLS.										
	Amount of local funds the income of which can be appropriated only for the support of Schools and Acad- emies.	Income of local funds.	Income of surplus rev- enue and other funds, including the dog tax, used at the option of the town.	Number of Acad- emies.	Whole No. attend- ing for the year.	Amount of tu- tion paid.	No. of Private Schools.	Whole No. attend- ing for the year.	Estimated am nt of tuition.	Town's share of school-fund pay- able Jan. 25, 1881.	How much of said fund was used for appar- tus and books of reference.
Amherst	\$5,000 00	\$300 00	\$184 67	-	-	-	3	45	\$2,000 00	\$221 61	-
Belchertown	-	-	131 93	-	-	-	-	-	-	246 84	\$10 22
Chesterfield	1,100 00	66 00	19 00	-	-	-	1	10	50 00	213 16	-
Cummington	-	-	30 00	-	-	-	-	-	-	215 22	20 00
Easthampton	258,000 00	11,250 00	110 50	1	240	\$12,000 00	-	-	-	232 64	39 50
Enfield	-	-	-	-	-	-	-	-	-	218 25	25 00
Goshen	-	-	-	-	-	-	-	-	-	206 64	-
Granby	-	-	35 75	-	-	-	-	-	-	213 84	-
Greenwich	500 00	30 00	39 15	-	-	-	-	-	-	210 15	-
Hadley	30,000 00	2,600 00	-	-	-	-	1	12	800 00	191 65	-
Hatfield	55,000 00	3,800 00	69 89	1	82	981 55	-	-	-	181 53	-
Huntington	-	-	61 69	-	-	-	-	-	-	218 73	-
Middlefield	-	-	131 71	-	-	-	-	-	-	214 44	-
Northampton	3,064 01	54 81	-	-	-	-	3	160	7,000 00	197 68	-
Pelham	-	-	48 94	-	-	-	-	-	-	212 59	-
Plainfield	-	-	-	-	-	-	-	-	-	205 86	50
Prescott	-	-	25 56	-	-	-	-	-	-	208 58	4 06
South Hadley	-	-	157 07	1	250	41,000 00	-	-	-	211 17	-
Southampton	-	120 00	68 80	-	-	-	-	-	-	219 53	-
Ware	-	-	-	-	-	-	-	-	-	235 29	-
Westhampton	-	-	21 49	-	-	-	-	-	-	213 65	-

SCHOOL-RETURNS.

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Williamsburg	.	21,065 67	1,292 94	97 45	-	-	-	-	-	240 13	17 47
Worthington	.	1,962 00	172 72	198 80	-	-	-	-	-	213 07	-
Totals	.	\$377,691 68	\$19,685 97	\$1,482 40	3	572	\$53,981 55	9	257	\$4,942 25	\$116 75

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MIDDLESEX COUNTY.

TOWNS.	Population — State Census, 1880.	Valuation — 1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 16 and 14 years of age.	No. of different pupils of all ages in the Pub- lic Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 5 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attend- ance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Acton	1,797	\$1,206,834	9	297	200	290	10	47	195	249	247	.90	9
Arlington	4,100	5,190,493	20	814	—	870	—	76	487	767	666	.87	23
Ashby	914	469,441	10	166	118	219	2	33	118	201	199	.99	11
Ashland	2,394	1,248,755	11	448	220	452	—	44	220	363	337	.92	12
Ayer	1,882	1,026,528	8	393	214	440	12	41	232	359	332	.92	8
Bedford	931	766,054	6	148	103	166	3	21	103	144	128	.89	6
Belmont	1,615	3,483,774	6	252	195	291	5	31	195	259	238	.92	11
Billerica	2,000	1,594,811	10	315	—	344	9	8	201	260	228	.88	10
Boxborough	319	280,751	4	50	30	58	1	13	30	47	45	.94	4
Burlington	711	491,510	5	124	76	116	1	13	74	105	90	.85	5
Cambridge	52,740	51,093,200	30*	9,390	—	8,537	—	603	—	7,175	6,814	.92	183
Carlisle	478	399,608	5	53	31	64	1	13	31	61	56	.93	5
Chelmsford	2,553	1,487,525	14	476	280	472	3	50	272	437	371	.85	15
Concord	3,922	3,008,548	15	636	359	608	—	83	343	584	505	.86	16
Dracut	1,605	1,242,972	10	268	221	334	3	28	216	232	202	.87	10
Dunstable	453	282,972	5	67	39	81	2	11	89	67	64	.96	5
Everett	4,159	4,203,550	17	764	452	891	1	68	636	718	651	.91	19
Frammingham	6,235	4,978,500	22	1,004	600	1,102	6	92	602	912	823	.90	33
Groton	1,862	2,446,361	14	824	175	395	9	62	175	264	232	.87	14
Holliston	3,099	1,752,459	15	576	—	612	2	64	355	515	471	.91	16
Hopkinton	4,602	2,937,391	23	920	583	1,054	16	73	636	869	780	.89	24
Hudson	3,739	1,848,424	15	732	433	839	13	47	485	639	599	.93	17
Lexington	2,480	2,580,061	11	420	272	461	6	63	270	339	309	.91	13

SCHOOL-RETURNS.

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Lincoln	882	928,021	5	149	96	187	4	34	92	128	114	·88	5
Littleton	994	725,565	7	164	113	198	2	82	114	144	130	·89	7
Lowell	59,485	42,785,735	90	9,121	5,049	9,297	—	568	5,210	6,617	5,961	·90	161
Malden	12,017	10,339,075	48	2,082	1,289	2,731	—	245	1,693	2,021	1,825	·90	52
Marlborough	10,126	3,720,166	36	2,121	—	2,297	12	101	1,305	1,858	1,645	·88	42
Maynard	2,291	1,805,955	8	425	293	475	12	25	289	350	319	·91	8
Medford	7,573	7,588,276	23	1,204	772	1,820	—	145	820	1,146	1,076	·93	29
Melrose	4,560	3,705,058	16	888	500	1,065	—	146	645	756	703	·93	19
Natick	8,480	4,655,066	34	1,665	1,048	1,757	—	98	1,020	1,541	1,413	·91	38
Newton	16,995	26,408,273	65	3,182	1,876	3,418	28	397	1,871	2,824	2,571	·72	77
North Reading	900	537,143	6	144	89	169	2	13	92	144	117	·81	6
Pepperell	2,348	1,401,648	8	372	228	376	7	85	211	276	237	·86	8
Reading	3,181	2,523,165	15	498	298	594	5	89	315	522	400	·88	17
Sherborn	1,401	860,575	6	155	88	147	1	7	89	112	98	·88	6
Shirley	1,365	724,459	7	195	90	222	7	20	80	158	154	·97	7
Somerville	24,985	22,569,100	82	5,054	3,040	5,540	—	449	2,700	4,278	4,004	·93	92
Stoneham	4,891	2,991,770	19	887	541	952	9	73	543	768	695	·90	19
Stow	1,045	870,205	6	198	128	241	1	37	126	183	148	·80	6
Sudbury	1,178	1,032,004	7	183	83	206	4	13	82	160	142	·89	7
Tewksbury	2,171	1,072,949	7	199	120	201	1	11	116	167	147	·88	7
Townsend	1,967	1,065,662	16	333	201	422	13	54	215	319	295	·92	16
Tyngsborough	631	322,160	9	108	98	131	3	12	98	124	116	·93	9
Wakefield	5,548	3,433,456	18	914	391	859	—	131	690	882	828	·94	21
Waltham	11,711	9,280,264	38	2,146	1,181	2,306	6	163	1,204	1,789	1,653	·92	45
Watertown	5,426	7,881,820	17	855	550	992	—	92	504	746	704	·94	23
Wayland	1,962	1,231,881	10	368	244	360	3	16	230	350	289	·83	10
Westford	2,147	1,058,620	11	362	225	413	9	16	225	303	273	·88	11
Weston	1,448	1,656,566	8	187	126	250	2	19	138	202	185	·91	8
Wilmington	933	562,542	6	148	—	166	2	12	86	140	121	·86	6
Winchester	3,802	3,741,844	14	563	—	730	1	50	326	584	536	·91	19
Woburn	10,938	8,216,383	46	2,229	1,262	2,280	—	174	1,210	2,035	1,834	·90	51
T. tals	317,951	\$268,986,013	973	55,736	24,620	58,998	239	4,856	28,254	47,198	42,980	·91	1,301

* Departments not included.

BOARD OF EDUCATION.

MIDDLESEX COUNTY — CONTINUED.

TOWNS.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A'g'e wages per month of male teachers in Public Schools.	A'g'e wages per month of female teachers in Public Schools.	Aggregate of months the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each	HIGH SCHOOLS.						Salary of Principal.
										No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Months.	Length.	
Acton	—	12	4	3	—	\$32 37	72-10	8	—	1	3	71	Taxation,	10-5	—	\$1,700 00
Arlington	4	19	4	4	\$112 69	46 06	205	10-5	—	1	—	—	—	—	—	—
Ashby	2	11	3	1	33 20	30 37	56-18	5-16	—	1	2	52	Taxation,	10	—	1,200 00
Ashland	1	15	4	4	120 00	83 80	85	7-15	—	1	1	31	Taxation,	8-18	—	828 42
Ayer	2	8	1	1	92 82	38 13	64-6	8	—	1	1	—	—	—	—	—
Bedford	1	6	1	1	34 66	32 00	54	9	—	1	2	50	Taxation,	10	—	1,500 00
Belmont	2	9	1	1	85 00	40 27	72	10	—	1	—	—	—	—	—	—
Billerica	1	11	2	2	32 00	31 60	78	7-16	—	1	—	—	—	—	—	—
Boxborough	1	4	—	—	32 00	28 00	28	8-7	1	—	—	—	—	—	—	—
Burlington	1	4	—	—	60 00	28 00	41-15	7	—	—	—	—	—	—	—	—
Cambridge	13	188	99	81	191 46	59 88	303-15	10-3	—	1	12	485	Taxation,	10-3	—	2,800 00
Carlisle	—	7	3	1	—	26 60	29	8	—	—	—	—	—	—	—	—
Chelmsford	1	17	7	6	90 00	31 49	108-15	7-15	2	1	1	38	Taxation,	8-10	—	765 00
Concord	2	24	8	8	156 25	45 50	128-7	8	1	2	2	80	Taxation,	9-12	—	1,500 00
Dracut	3	10	3	3	32 00	32 00	87-10	8-15	—	—	—	—	—	—	—	—
Dunstable	—	10	—	—	—	21 78	32-10	6-10	—	—	—	—	—	—	—	—
Everett	2	19	6	4	110 00	41 00	160	9-13	—	1	2	34	Taxation,	10	—	1,200 00
Frammingham	2	32	15	15	130 00	43 00	201-15	8-17	—	2	5	125	Taxation,	10	—	1,400 00 1,200 00
Groton	8	15	—	—	48 00	36 51	110-13	7-18	—	—	—	—	—	—	—	—
Holliston	1	19	1	—	100 00	31 86	122	8-3	—	1	2	72	Taxation,	9-10	—	950 00
Hopkinton	2	33	11	5	103 91	37 96	191	8-12	—	1	2	57	Taxation,	9-15	—	962 57
Hudson	2	23	10	9	85 60	37 50	123-10	8-5	—	1	2	43	Taxation,	9-15	—	850 00
Lexington	3	10	2	1	100 00	44 50	110	10	—	1	2	48	Taxation,	10	—	1,250 00

SCHOOL-RETURNS.

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Lincoln	3	5	-	56 00	36 00	42-4	8-9	-	1	1	36	Taxation,	9	561 00
Littleton	1	9	1	36 00	32 15	59-10	8-10	-	-	-	-	-	-	-
Lowell	13	168	51	153 50	55 89	820-12	9-2	2	11	439	Taxation,	9-15	1,940 00	
Malden	1	51	16	175 00	51 83	441-14	10-5	-	5	175	Taxation,	10-5	1,750 00	
Marlborough	3	46	8	84 83	27 92	285-5	7-18	-	1	3	141	Taxation,	9	1,200 00
Maynard	5	7	4	55 00	44 00	73	9	-	1	37	Taxation,	10	800 00	
Medford	7	26	6	144 00	47 00	224	10	-	1	3	118	Taxation,	10	2,050 00
Melrose	1	18	8	160 00	47 70	160	10	-	3	91	Taxation,	10	1,600 00	
Natick	5	33	17	114 30	38 50	304	8-18	-	1	3	91	Taxation,	10	1,200 00
Newton	15	69	21	156 43	66 55	650	10	-	1	12	319	Taxation,	10	2,700 00
North Reading	-	7	5	-	33 00	51	8-10	-	1	1	84	Taxation,	8	306 00
Pepperell	-	10	2	-	32 50	64-10	8	-	-	-	-	-	-	-
Reading	2	22	5	105 25	37 75	142-10	9-10	-	1	3	108	Taxation,	9-10	1,000 00
Sherborn	-	6	2	-	32 22	50-12	8-8	-	1	1	45	In part,	9	1,100 00
Shirley	3	7	4	44 00	25 20	49-5	7	-	-	-	-	-	-	-
Somerville	9	88	16	171 43	50 90	820	10	-	1	7	337	Taxation,	10	2,200 00
Stoneham	1	22	3	155 00	43 84	170-13	9	-	1	3	76	Taxation,	10	1,540 00
Stow	2	7	1	47 00	32 00	52-4	8-14	-	1	1	35	In part,	7	430 00
Sudbury	-	7	1	-	37 00	56	8	-	-	-	-	-	-	-
Tewksbury	-	1	1	34 00	34 00	65	9	-	-	-	-	-	-	-
Townsend	5	19	3	44 00	25 83	110	6-18	-	1	1	48	Taxation,	9	500 00
Tyngsborough	1	9	4	70 00	25 06	47-15	6-9	-	1	1	24	In part,	3	210 00
Wakefield	2	19	4	95 00	40 89	180	10	-	1	3	55	Taxation,	10	1,100 00
Waltham	6	42	9	126 00	47 90	368	9-15	-	1	4	156	Taxation,	10	1,600 00
Watertown	8	21	3	97 50	47 25	170	10	-	1	5	72	Taxation,	10	1,600 00
Wayland	4	10	3	72 00	35 50	85	8-10	-	-	-	-	-	-	-
Westford	-	14	1	-	30 76	89-4	8-1	-	-	-	-	-	-	-
Weston	2	8	3	111 00	37 00	70-16	8-17	-	1	1	32	Taxation,	9	1,000 00
Wilmington	2	8	4	48 00	32 00	50	8-7	-	1	1	80	Taxation,	9-10	450 00
Winchester	3	20	4	130 00	40 60	134-9	9-12	-	1	3	55	Taxation,	10	1,600 00
Woburn	5	46	3	105 00	45 00	448	9-15	-	1	4	139	Taxation,	10	1,800 00
Totals	164	1,339	397	\$107 32	\$46 57	8799-7	9-1	6	38	119	3,874	-	-	\$48,342 99

MIDDLESEX COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for Schools, including wages of teachers, board, fuel, care of dress and school-rooms, 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expense of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Acton	\$2,718 00	\$2,500 00	\$90 00	—	\$85 00	\$60 00	—	—	\$25 00	—
Arlington	16,673 15	17,000 00	—	—	—	410 89	—	\$187 81	399 07	—
Ashby	2,044 64	1,750 00	75 00	—	15 00	152 35	—	—	52 29	—
Ashland	5,526 44	4,033 00	156 50	—	20 00	99 39	\$947 75	87 20	182 60	—
Ayer	3,625 98	3,500 00	150 00	—	12 00	69 74	—	—	128 63	—
Bedford	1,800 00	1,800 00	75 00	—	20 00	134 71	—	—	57 64	—
Belmont	6,184 52	4,650 00	240 00	—	17 50	77 70	—	—	94 02	—
Billerica	3,217 63	2,800 00	215 00	—	50 00	63 15	—	—	91 66	—
Boxborough	706 44	655 01	38 93	—	12 50	4 22	—	—	2 50	—
Burlington	1,200 00	1,200 00	10 00	—	15 00	20 78	—	—	8 44	—
Cambridge	161,724 34	140,686 60	3,015 00	\$2,700 00	300 00	4,204 00	7,986 00	—	5,582 56	—
Carlisle	700 00	700 00	30 00	—	20 00	5 00	—	—	13 00	—
Chelmsford	4,902 50	4,500 00	230 22	230 22	—	89 46	—	—	82 82	—
Concord	8,893 56	8,221 50	389 00	325 00	—	416 64	13,885 00	29 24	295 14	—
Dracut	3,600 00	3,000 00	150 00	150 00	23 37	39 15	—	14 21	477 07	—
Dunstable	836 43	600 00	28 00	—	10 80	63 88	—	—	—	—
Everett	11,034 44	9,898 88	150 00	—	15 00	417 98	—	87 06	374 74	\$104 00
Frammingham	15,932 00	14,800 00	650 00	650 00	68 00	522 00	9,992 07	—	599 50	—
Groton	5,300 00	4,700 00	200 00	—	18 00	200 00	—	—	182 00	—
Holliston	6,854 46	5,500 00	300 00	300 00	44 75	165 62	—	—	453 09	134 00
Hopkinton	8,200 00	8,000 00	300 00	—	55 00	202 74	—	285 00	134 36	32 56
Hudson	8,517 52	7,200 00	285 00	—	27 00	283 52	225 00	—	290 00	—
Lexington	9,414 52	8,400 00	300 00	—	24 50	90 02	—	200 00	400 00	—

SCHOOL-RETURNS.

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Lincoln .	1,874 41	2,000 00	25 00	-	18 00	30 11	-	-	16 78	-
Littleton .	2,407 52	2,021 00	77 00	77 00	38 00	53 83	-	-	217 69	-
Lowell .	135,693 00	119,430 00	2,150 00	2,150 00	498 80	4,424 18	28,660 00	5,351 00	5,381 00	-
Malden .	30,310 24	32,000 00	2,000 00	2,000 00	22 83	1,093 18	-	2,732 55	1,357 98	-
Marlborough .	19,901 45	15,600 00	780 00	-	53 65	1,373 65	-	851 34	-	-
Maynard .	8,827 24	3,500 00	80 00	-	10 00	192 05	-	60 00	40 00	-
Medford .	32,531 00	23,367 00	1,150 00	800 00	50 00	749 00	-	6,265 00	950 00	-
Melrose .	13,969 81	11,000 00	325 00	-	15 00	520 86	-	84 00	893 08	-
Natick .	17,875 00	16,000 00	375 00	-	-	421 00	-	-	1,079 00	50 00
Newton .	85,898 86	69,249 59	3,000 00	2,700 00	288 00	6,630 40	-	2,784 17	8,946 70	-
North Reading, .	1,670 07	1,600 00	74 50	-	6 50	13 00	-	-	103 48	-
Pepperell .	2,650 55	2,400 00	100 00	100 00	29 00	25 00	-	-	98 55	-
Reading .	9,007 41	8,000 00	275 00	-	50 00	170 45	-	-	529 55	-
Sherborn .	2,964 63	1,800 00	141 75	-	30 00	27 26	-	686 72	73 15	-
Shirley .	1,787 87	2,000 00	163 82	-	11 00	175 00	-	-	265 57	-
Somerville .	79,624 00	67,233 00	1,800 00	1,800 00	75 00	1,711 00	-	6,275 00	-	-
Stoneham .	12,864 26	11,750 00	400 00	-	8 50	485 51	-	-	428 75	-
Stow .	1,800 00	1,700 00	75 00	75 00	25 00	25 44	-	108 00	60 00	-
Sudbury .	5,090 00	2,000 00	300 00	-	15 00	100 00	2,500 00	150 00	25 00	-
Tewksbury .	2,270 23	2,000 00	150 00	-	15 00	21 00	-	45 00	52 89	-
Townsend .	4,925 52	3,400 00	100 00	100 00	35 00	25 00	-	782 60	488 64	-
Tyngsborough .	1,103 80	1,150 00	50 00	-	23 00	59 00	-	-	15 00	-
Wakefield .	13,000 00	11,500 00	200 00	-	40 00	478 10	-	500 00	403 07	-
Waltham .	56,863 28	34,363 28	1,700 00	1,700 00	30 00	464 50	22,500 00	370 00	916 99	-
Watertown .	17,207 85	15,020 00	300 00	-	50 00	929 04	-	1,595 67	-	-
Wayland .	4,315 07	4,000 00	95 00	-	15 00	165 47	-	-	39 60	-
Westford .	3,311 65	3,000 00	150 00	150 00	35 00	22 25	1,179 97	-	141 00	-
Weston .	4,308 00	3,550 00	240 00	-	18 00	240 00	-	-	260 00	-
Wilmington .	1,638 00	1,550 00	50 00	-	10 00	-	-	-	100 00	-
Winchester .	13,489 54	12,000 00	350 00	-	-	827 31	-	-	1,113 30	-
Woburn .	27,637 45	30,000 00	800 00	800 00	15 00	1,792 18	-	-	1,743 62	-
Totals .	\$901,423 73	\$770,279 86	\$24,554 72	\$16,882 22	\$2,331 70	\$30,937 53	\$87,825 79	\$29,531 57	\$30,666 52	\$320 56

BOARD OF EDUCATION.

MIDDLESEX COUNTY — CONCLUDED.

TOWNS.	Amount of local funds the income of which can be appropriated only for the support of Schools and Academies.	Income of local funds.	Income of surplus revenue and other funds, including the dog tax, used at the option of the town.	ACADEMIES AND PRIVATE SCHOOLS.							
				Number of Academies.	Whole No. attending for the year.	Amount of tuition paid.	No. of Private Schools.	Whole No. attending for the year.	Estimated amount of tuition.	Town's share of school-fund payable Jan. 25, 1881.	How much of said fund was used for apparatus and books of reference.
Acton .	-	\$321 24	\$178 67	-	-	-	-	-	-	\$179 56	-
Arlington .	\$5,384 00	-	-	-	-	-	-	-	-	179 23	-
Ashby .	-	-	54 27	-	-	-	-	-	-	216 98	-
Ashland .	-	-	198 93	-	-	-	-	-	-	187 16	-
Ayer .	-	-	-	-	-	-	1	8	\$60 00	236 01	\$30 50
Bedford .	-	-	-	-	-	-	-	-	-	214 72	10 50
Belmont .	-	-	-	-	37	\$222 00	2	16	750 00	190 97	-
Billerica .	21,000 00	1,260 00	-	1	29	6,000 00	1	29	6,000 00	183 56	-
Boxborough .	-	-	98 04	-	-	-	-	-	-	205 28	-
Burlington .	-	-	-	-	-	-	20	1,748	20,480 00	211 31	-
Cambridge .	10,000 00	767 72	-	-	-	-	-	-	-	205 67	18 00
Carlisle .	500 00	30 00	72 75	-	-	-	-	-	-	193 92	-
Chelmsford .	-	-	236 07	-	-	-	4	49	1,280 00	152 21	38 05
Concord .	4,300 00	236 75	-	-	-	-	1	7	-	173 33	-
Dracut .	-	-	102 60	-	-	-	-	-	-	206 56	-
Dunstable .	-	-	-	-	-	-	1	30	360 00	171 62	-
Everett .	-	-	-	-	-	-	3	30	500 00	196 60	-
Framingham .	1,259 00	75 54	817 49	-	-	-	-	-	-	181 70	-
Groton .	33,620 00	1,852 20	-	1	118	1,600 00	-	-	-	209 03	-
Holliston .	-	-	-	-	-	-	1	15	175 00	240 25	-
Hopkinton .	-	-	373 94	-	-	-	-	-	-	225 53	-
Hudson .	5,680 00	350 00	180 53	-	-	-	-	-	-	190 98	-
Lexington .	-	-	-	-	-	-	1	20	1,000 00	-	-

SCHOOL-RETURNS.

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Lincoln	1,209 21	58 24	-	-	-	-	-	-	-	214 47	-
Littleton	2,513 03	150 78	-	-	-	-	-	-	-	215 51	9 01
Lowell	-	-	-	1	90	-	-	-	-	-	-
Malden	-	-	-	-	-	-	-	-	1,350	-	-
Marlborough	2,660 75	153 04	-	-	-	-	-	-	20	-	-
Maynard	-	-	-	-	-	-	-	-	290	-	30 35
Medford	-	-	148 41	-	-	-	-	-	-	301 62	-
Medford	-	-	-	-	-	-	-	-	-	196 44	-
Melrose	-	-	-	-	-	-	-	-	-	124 79	124 79
Melrose	-	-	-	-	-	-	-	-	10*	181 96	100 00
Natick	-	-	-	-	-	-	-	-	-	255 81	63 95
Newton	-	-	712 50	2	232	-	-	-	163	-	-
North Reading	-	-	-	-	-	-	-	-	-	215 23	30 00
Pepperell	-	-	-	-	-	-	-	-	-	182 19	19 00
Reading	-	-	-	-	-	-	-	-	12	197 53	35 87
Sherborn	19,500 00	-	-	-	-	-	-	-	18	215 22	-
Shirley	10,745 49	1,250 00	70 96	1*	45	-	-	-	-	219 90	25 00
Somerville	-	-	216 00	-	-	-	-	-	-	-	-
Stonham	-	-	-	-	-	-	-	-	540	-	-
Stow	9,600 00	629 25	84 56	-	-	-	-	-	-	235 10	36 00
Sudbury	300 00	18 00	287 45	-	-	-	-	-	-	218 64	-
Tewksbury	-	-	-	-	-	-	-	-	-	168 72	10 00
Townsend	-	-	-	-	-	-	-	-	-	168 22	-
Tyngsborough	3,000 00	133 82	-	-	-	-	-	-	-	185 01	22 00
Wakefield	-	-	-	-	-	-	-	-	-	210 24	-
Walham	-	-	228 28	1	70	-	-	-	-	184 52	-
Watertown	-	-	-	-	-	-	-	-	33	176 41	-
Wayland	200 00	12 00	-	-	-	-	-	-	7	85 06	-
Westford	31,237 94	1,870 00	139 51	-	-	-	-	-	-	187 93	-
Weston	-	-	-	1	67	-	-	-	-	178 28	-
Wilmington	-	-	112 20	-	-	-	-	-	-	171 46	-
Winchester	-	-	-	-	-	-	-	-	-	217 09	-
Woburn	12,000 00	-	-	1	-	-	-	-	18	156 98	44 43
Totals	\$174,709 42	\$9,168 08	\$3,763 16	9	659	\$24,432 00	69	4,453	\$43,935 00	\$9,653 01	\$647 45

* With High School.

BOARD OF EDUCATION.

NANTUCKET COUNTY.

TOWNS.	Population—State Census, 1880.	Valuation—1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 8 and 14 years of age.	No. of different pupils of all ages in the Pub- lic Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 5 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attend- ance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Nantucket . .	3,726	\$2,352,123	11	560	304	425	—	28	265	415	373	.90	13

NORFOLK COUNTY.

Bellingham . .	1,223	\$552,076	9	215	154	241	2	12	146	184	168	.91	9
Braintree . .	3,855	2,938,275	17	669	406	847	9	55	478	618	517	.83	18
Brookline . .	8,053	23,723,300	30	1,303	—	1,418	—	162	—	1,105	1,028	.93	34
Canton . .	4,523	3,116,218	18	939	537	1,002	3	53	591	1,755	683	.90	22
Cohasset . .	2,182	2,853,904	12	412	265	474	—	46	271	364	301	.82	13
Dedham . .	6,224	6,065,888	30	1,080	688	1,206	—	78	673	998	908	.91	31
Dover . .	653	460,021	4	100	61	103	—	6	62	73	63	.89	4
Foxborough . .	2,951	1,466,044	12	521	332	483	3	33	293	397	372	.94	13
Franklin . .	4,051	1,809,980	16	642	381	666	—	34	389	529	477	.90	16
Holbrook . .	2,182	1,056,485	9	381	191	463	5	27	284	393	349	.88	10
Hyde Park . .	7,090	4,378,116	29	1,401	833	1,423	4	122	1,009	1,249	1,114	.89	31
Medfield . .	1,365	1,102,780	5	201	127	215	1	16	125	169	151	.89	5
Medway . .	3,955	1,531,030	18	746	457	816	2	57	478	651	584	.90	20
Milton . .	3,206	10,293,950	14	551	343	588	1	88	350	445	416	.93	17
Needham . .	5,254	4,632,737	25	885	498	1,058	19	67	634	724	628	.87	27
Norfolk . .	930	402,329	6	128	73	152	2	5	82	108	96	.94	6
Norwood . .	2,345	1,899,267	10	441	264	449	—	23	276	421	362	.86	11

SCHOOL-RETURNS.

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Quincy . . .	10,529	7,560,881	43	1,948	1,311	2,097	-	121	1,348	1,643	1,562	.95	46
Randolph . . .	4,027	2,069,620	18	716	438	783	16	60	494	706	645	.91	19
Sharon . . .	1,492	1,096,119	6	216	164	234	1	24	126	204	176	.86	5
Stoughton . . .	4,875	2,208,300	22	960	575	1,044	15	69	570	908	822	.90	24
Walpole . . .	2,494	1,358,356	10	369	267	423	2	36	292	341	274	.80	10
Weymouth . . .	10,571	5,591,542	47	2,028	1,117	2,191	-	134	1,114	1,934	1,700	.88	52
Wrentham . . .	2,482	1,258,344	12	393	241	443	3	81	275	343	312	.91	13
Totals . . .	96,402	\$89,424,009	422	17,225	9,723	18,819	88	1,309	10,310	15,202	13,603	.88	456

NANTUCKET COUNTY — CONTINUED.

TOWNS.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A'ge wages per month of male teachers in Public Schools.	A'ge wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Length. Months.	Salary of Principal.
Nantucket .	2	15	1	1	\$90 00	\$23 50	95-15	8-16	2	1	2	61	Taxation,	10	\$900 00

NORFOLK COUNTY — CONTINUED.

Bellingham	1	15	5	4	\$50 00	\$29 48	66-15	7-9	-	1	1	27	Taxation,	7-10	\$375 00
Braintree	4	19	5	1	68 00	32 00	170	10	-	1	2	77	Taxation,	10	1,400 00
Brookline	3	31	12	12	187 50	63 80	292	9-17	-	1	4	122	Taxation,	10	2,700 00
Canton	3	19	3	2	100 00	37 58	180	10	-	1	2	71	Taxation,	10	1,200 00
Cohasset	2	14	2	1	62 50	38 81	119-10	9-19	-	1	2	113	Taxation,	10	1,000 00
Dedham	8	29	12	12	98 80	45 35	289-8	9-16	-	1	3	125	Taxation,	9-18	1,800 00
Dover	2	4	2	2	32 00	32 00	36	9	-	1	-	-	-	-	-
Foxborough	1	15	1	-	111 11	35 72	105	8-15	-	1	2	60	Taxation,	9	1,000 00
Franklin	3	20	5	5	60 00	60 26	133-10	8-6	-	1	1	41	Taxation,	9-15	1,000 00
Holbrook	2	10	5	3	100 00	36 94	90	10	-	1	2	65	Taxation,	10	1,000 00
Hyde Park	5	36	5	3	126 00	44 78	283-4	9-15	-	1	3	97	Taxation,	9-19	1,555 00
Medfield	5	4	4	3	48 33	36 60	47-3	9-8	-	1	1	66	Taxation,	9-10	800 00
Medway	7	18	7	7	64 11	33 39	150	8-7	-	1	2	68	Taxation,	10	1,000 00
Milton	5	12	8	8	128 00	51 08	140	10	-	1	2	48	Taxation,	10	1,800 00
Needham	3	33	9	7	120 00	45 04	244	9-15	-	1	4	110	Taxation,	10	1,200 00
Norfolk	1	8	-	6	36 00	33 20	48	8	-	1	-	-	-	-	-
Norwood	2	14	7	6	117 00	40 60	88-11	8-17	-	1	2	56	Taxation,	9-5	1,082 25

SCHOOL-RETURNS.

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Quincy	.	10	56	18	14	100 00	42 50	430	10	-	1	3	154	Taxation,	10	1,400 00
Randolph	.	3	19	5	5	104 72	35 14	171	9-10	-	1	2	74	Part tax,	9-10	1,005 00
Sharon	.	1	6	2	2	80 00	33 60	48	9	-	1	1	37	Taxation,	9-10	760 00
Stoughton	.	6	20	5	4	75 87	32 95	193	8-15	-	1	2	90	Taxation,	9	1,200 00
Walpole	.	1	16	5	4	87 00	34 64	93-5	9-10	-	1	1	38	Taxation,	10	870 00
Weymouth	.	10	51	5	4	88 68	33 75	454-5	9-13	-	2	4	140	Taxation,	9-15	2,400 00
Wrentham	.	4	14	4	3	91 67	33 50	97-10	8-3	-	1	1	31	Taxation,	9	800 00
Totals	.	92	483	136	112	\$91 70	\$40 43	3970-1	9-8	-	23	47	1,710	-	-	\$27,347 25

BOARD OF EDUCATION.

NANTUCKET COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for Schools, including wages of teachers, board, fuel, care of fires and school-rooms, for the school-year 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expenses of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Nantucket .	\$4,437 61	\$4,314 55	\$100 00	—	\$30 00	\$426 42	\$600 00	—	\$45 00	—

NORFOLK COUNTY — CONTINUED.

Bellingham .	\$1,950 47	\$1,800 00	\$85 00	\$85 00	\$21 00	\$18 93	—	—	\$150 47	—
Braintree .	8,634 76	7,000 00	308 60	—	—	182 85	—	\$434 20	—	—
Brookline .	35,363 19	36,000 00	2,500 00	2,200 00	18 00	978 82	—	850 00	550 00	—
Canton .	14,077 95	10,400 00	1,115 00	1,115 00	61 20	979 26	—	560 00	700 28	—
Cohasset .	5,807 08	5,500 00	260 00	200 00	30 00	212 64	—	206 94	162 96	—
Dedham .	23,669 98	21,435 00	1,300 00	1,050 00	63 00	417 88	—	797 50	656 60	—
Dover .	1,378 84	1,100 00	30 00	30 00	25 00	83 88	—	—	79 18	—
Foxborough .	5,450 07	5,200 00	230 00	—	35 00	224 98	—	239 26	125 54	\$38 00
Franklin .	6,788 29	6,300 00	475 50	—	40 00	—	—	—	115 05	—
Holbrook .	5,000 00	4,700 00	225 00	—	—	—	—	225 00	800 00	—
Hyde Park .	22,319 02	19,000 00	400 00	—	80 00	1,629 55	—	—	810 47	—
Medfield .	2,522 55	2,400 00	107 25	—	10 00	145 85	—	—	64 49	—
Medway .	8,209 57	7,000 00	322 50	—	35 00	384 89	—	—	467 18	—
Milton .	16,939 26	13,391 95	935 00	935 00	—	782 60	—	1,003 18	515 03	—
Needham .	16,882 77	15,000 00	543 00	—	35 00	794 34	—	—	335 11	150 00
Norfolk .	1,531 33	1,200 00	—	—	27 00	75 00	—	—	12 71	—
Norwood .	9,823 14	5,900 00	120 00	—	27 00	144 55	\$4,000 00	200 15	169 07	—

SCHOOL-RETURNS.

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Quincy . .	33,400 57	26,100 00	2,000 00	2,000 00	40 00	1,984 89	-	2,341 75	-	-
Randolph .	10,041 61	9,000 00	-	-	-	100 00	-	304 59	115 47	-
Sharon .	2,494 79	2,000 00	-	-	23 25	169 57	-	-	168 68	-
Stoughton .	11,807 40	10,208 18	-	-	40 00	250 00	-	735 60	311 57	-
Walpole .	6,250 14	5,300 00	-	-	-	170 88	-	-	588 31	110 00
Weymouth .	32,863 93	24,394 49	600 00	600 00	78 00	985 39	-	5,483 85	1,369 02	-
Wrentham .	5,721 82	4,500 00	-	-	10 00	118 86	1,901 15	61 15	76 89	-
Totals .	\$288,378 53	\$244,827 68	\$13,517 51	\$3,215 00	\$648 45	\$10,835 06	\$5,901 15	\$18,443 17	\$7,843 53	\$298 00

NANTUCKET COUNTY — CONCLUDED.

TOWNS.	Amount of local funds the income of which can be appropriated only for the support of Schools and Academies.	Income of local funds.	Income of surplus revenue and other funds, including the dog tax, used at the option of the town.	ACADEMIES AND PRIVATE SCHOOLS.							Town's share of school-fund payable Jan. 25, 1881.	How much of said fund was used for apparatus and books of reference.
				Number of Academies.	Whole No. attending for the year.	Amount of tuition paid.	No. of Private Schools.	Whole No. attending for the year.	Estimated amount of tuition.	\$205 48		
Nantucket . .	\$35,000 00	\$2,080 00	-	1	78	\$610 00	1	78	\$610 00	\$205 48	\$60 00	

NORFOLK COUNTY — CONCLUDED.

Bellingham . .	\$418 16	\$25 09	\$277 07	1	63	\$650 00	1	128	-	\$220 69	221 73	\$45 00
Brantree . .	6,700 00	250 00	424 00	-	-	-	-	-	-	-	-	-
Brookline . .	-	-	-	-	-	-	-	-	-	-	-	-
Canton . .	-	-	402 14	-	-	-	-	-	-	191 95	-	-
Cohasset . .	1,000 00	40 40	217 64	-	-	-	-	-	-	190 88	-	22 07
Dedham . .	1,000 00	60 00	-	-	-	-	3	32	\$1,500 00	108 83	-	40 00
Dover . .	-	-	68 60	-	-	-	-	-	-	210 24	-	-
Foxborough . .	-	-	284 50	-	-	-	-	-	-	195 46	-	-
Franklin . .	100,000 00	6,000 00	-	1	128	2,960 00	2	51	460 00	212 18	-	53 09
Holbrook . .	-	-	144 00	-	-	-	-	-	-	189 32	-	-
Hyde Park . .	-	-	-	-	-	-	-	-	-	234 94	-	102 03
Medfield . .	3,760 20	228 11	-	-	-	-	2	18	500 00	170 19	-	-
Medway . .	100 00	6 00	-	-	-	-	-	-	-	225 26	-	25 42
Milton . .	-	-	-	-	-	-	-	-	-	48 50	-	-
Needham . .	1,000 00	-	384 75	-	-	-	1	20	600 00	188 03	-	-
Norfolk . .	-	-	84 07	-	-	-	-	-	-	215 80	-	-
Norwood . .	-	-	-	-	-	-	1	12	200 00	190 97	-	37 50

SCHOOL-RETURNS.

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Quincy .	141,801 61	775 00	-	1	14	350 00	2	51	1,600 00	166 29	-
Randolph .	12,500 00	1,113 00	-	-	-	-	-	-	-	173 43	-
Sharon .	2,360 00	148 50	144 00	-	-	-	-	-	-	220 14	-
Stoughton .	-	-	-	-	-	-	-	-	-	246 11	-
Walpole .	-	-	-	-	-	-	-	-	-	186 20	10 00
Weymouth .	10,000 00	552 00	746 80	-	-	-	1	20	820 00	202 47	-
Wrentham .	1,818 26	109 08	272 20	-	-	-	-	-	-	190 85	-
Totals .	\$282,458 23	\$9,807 18	\$3,449 77	3	205	\$3,960 00	12	204	\$5,180 00	\$4,400 46	\$335 11

NANTUCKET COUNTY — CONCLUDED.

TOWNS.	Amount of local funds the income of which can be appropriated only for the support of Schools and Acad- emies.	Income of local funds.	Income of surplus rev- enue and other funds, including the dog tax, used at the option of the town.	ACADEMIES AND PRIVATE SCHOOLS.							
				Number of Acad- emies.	Whole No. attend- ing for the year.	Amount of tu- tion paid.	No. of Private Schools.	Whole No. attend- ing for the year.	Estimated am't of tuition.	Town's share of school-fund pay- able Jan. 25, 1881.	How much of said fund was used for appara- tus and books of reference.
Nantucket . .	\$38,000 00	\$2,080 00	-	1	78	\$610 00	1	78	\$610 00	\$205 48	\$60 00

NORFOLK COUNTY — CONCLUDED.

Bellingham . .	\$418 16	\$25 09	\$277 07	1	63	\$650 00	-	-	-	\$220 69	-
Braintree . .	6,700 00	250 00	424 00	-	-	-	-	-	-	221 78	\$45 00
Brookline . .	-	-	-	-	-	-	-	-	-	-	-
Canton . .	-	-	402 14	-	-	-	-	-	-	191 95	-
Cohasset . .	1,000 00	40 40	217 64	-	-	-	-	32	\$1,500 00	190 88	22 07
Dedham . .	1,000 00	60 00	-	-	-	-	-	-	-	108 83	40 00
Dover . .	-	-	68 60	-	-	-	-	-	-	210 24	-
Foxborough . .	-	-	284 50	-	-	-	-	-	-	195 46	-
Franklin . .	100,000 00	6,000 00	-	1	128	2,960 00	-	51	460 00	212 18	53 09
Holbrook . .	-	-	144 00	-	-	-	-	-	-	189 32	-
Hyde Park . .	-	-	-	-	-	-	-	18	500 00	234 94	102 03
Medfield . .	3,760 20	228 11	-	-	-	-	-	-	-	170 19	-
Medway . .	100 00	6 00	-	-	-	-	-	-	-	225 26	25 42
Milton . .	-	-	-	-	-	-	-	20	600 00	48 50	-
Needham . .	1,000 00	-	384 75	-	-	-	-	-	-	188 03	-
Norfolk . .	-	-	84 07	-	-	-	-	-	-	215 80	-
Norwood . .	-	-	-	-	-	-	-	12	200 00	190 97	37 50

SCHOOL-RETURNS.

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Quincy	141,801 61	775 00	-	1	14	350 00	2	51	1,600 00	166 29	-
Randolph	12,500 00	1,113 00	-	-	-	-	-	-	-	173 43	-
Sharon	2,360 00	148 50	144 00	-	-	-	-	-	-	220 14	-
Stoughton	-	-	-	-	-	-	-	-	-	246 11	-
Walpole	-	-	-	-	-	-	-	-	-	186 20	10 00
Weymouth	10,000 00	552 00	746 80	-	-	-	1	20	320 00	202 47	-
Wrentham	1,818 26	109 08	272 20	-	-	-	-	-	-	190 85	-
Totals	\$282,458 23	\$9,307 18	\$3,449 77	3	205	\$3,960 00	12	204	\$5,180 00	\$4,400 46	\$335 11

PLYMOUTH COUNTY.

TOWNS.	Population — Census, 1880.	Valuation — 1881.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 8 and 14 years of age.	No. of different pupils of all ages in the Pub- lic Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 8 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attend- ance based upon the average No. belonging	No. of teachers required by the Public Schools.
Abington	3,697	\$1,760,938	16	632	387	714	8	64	405	618	533	.86	18
Bridgewater	3,620	2,020,479	19	653	362	671	3	65	384	578	532	.92	21
Brocton	13,608	6,376,427	43	2,267	1,204	2,444	—	145	1,313	2,004	1,769	.88	46
Carver	1,039	515,194	8	174	122	218	5	21	122	173	157	.91	8
Duxbury	2,196	1,072,438	10	370	243	390	10	44	231	318	266	.83	11
East Bridgewater	2,710	1,335,905	14	477	275	498	4	42	270	478	437	.91	15
Halifax	542	261,419	4	82	54	83	3	8	47	65	58	.89	4
Hanover	1,897	1,069,181	9	330	230	300	2	22	202	282	240	.85	9
Hanson	1,309	503,069	7	243	145	227	5	10	127	178	150	.84	7
Hingham	4,485	3,265,284	16	696	—	775	7	68	—	710	566	.80	18
Hull	383	1,316,124	2	53	28	54	—	2	28	47	40	.85	2
Kingston	1,524	1,543,175	7	217	132	250	1	25	140	216	192	.88	7
Lakeville	1,008	462,545	9	220	163	197	6	15	146	161	120	.80	9
Marion	958	583,505	6	168	96	179	—	17	96	156	143	.92	6
Marshfield	1,785	1,033,080	10	247	181	288	1	20	177	219	179	.82	10
Mattapoisett	1,365	1,261,659	6	205	116	224	1	33	115	192	164	.85	7
Middleborough	5,237	2,941,970	24	869	564	958	4	93	584	789	684	.87	27
Pembroke	1,405	590,590	8	268	165	245	5	6	170	191	165	.86	8
Plymouth	7,094	4,378,300	31	1,272	803	1,336	10	40	803	1,155	1,075	.92	33
Plymouth	694	290,095	5	118	75	125	1	10	75	95	75	.78	5
Rochester	1,043	447,145	7	207	122	193	2	23	111	172	140	.87	7
Rockland	4,553	2,054,855	19	883	545	992	1	83	484	879	779	.86	20
Scituate	2,466	1,285,217	13	525	321	508	18	22	311	411	373	.91	13

SCHOOL-RETURNS.

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South Abington .	1,820	2,134,053	10	533	304	574	7	33	314	493	454	92	12
South Scituate .	3,024	937,241	10	316	210	350	4	15	205	278	239	85	10
Wareham .	2,897	1,094,349	15	550	400	823	16	50	390	592	540	91	16
West Bridgewater .	1,665	863,662	10	314	168	315	6	17	166	280	245	87	10
Totals .	74,024	\$41,597,896	338	12,892	7,412	13,731	130	988	7,416	11,730	10,315	88	359

SUFFOLK COUNTY.

Boston .	362,535	\$665,554,597	468	57,703	-	59,768	-	4,736	24,462	50,957	44,885	88	1,117
Chelsea .	21,785	15,761,537	63	3,648	2,157	4,169	-	267	1,740	3,159	2,877	91	68
Revere .	2,263	2,448,745	9	401	259	416	2	14	327	370	335	90	9
Winthrop .	1,043	1,556,246	4	153	94	148	-	7	91	133	125	94	4
Totals .	387,626	\$685,321,125	544	61,905	2,510	64,501	2	5,024	26,620	54,619	48,222	88	1,198

BOARD OF EDUCATION.

PLYMOUTH COUNTY — CONTINUED.

TOWNS.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A'ge wages per month of male teachers in Public Schools.	A'ge wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	HIGH SCHOOLS.						Salary of Principal.
										No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Length. Days.	Months.	
Abington	2	21	3	3	\$97 50	\$33 36	160	10	-	2	4	76	Taxation,	10	-	\$1,000 00
Bridgewater	5	21	18	17	75 50	34 00	159	9	-	1	3	85	Taxation,	9	-	950 00
Brockton	6	40	20	15	94 60	37 00	374	9-15	-	1	3	180	Taxation,	10	-	1,100 00
Carver	6	7	1	1	29 00	28 20	59-7	7-10	-	1	2	56	Partly tax,	10	-	1,700 00
Duxbury	2	10	1	1	68 00	32 75	91	9-1	-	1	2	42	Taxation,	10	-	1,000 00
E. Bridgewater	8	16	5	5	74 50	28 75	124	9-2	-	1	2	42	Taxation,	10	-	1,050 00
Halifax	1	7	3	3	-	24 00	32	8	-	1	1	43	Taxation,	9	-	648 00
Hanover	1	12	4	3	72 00	30 00	81	9	-	1	2	91	Taxation,	10	-	1,600 00
Hanson	1	8	3	3	40 00	26 68	63-2	9	-	1	1	44	Taxation,	9-5	-	1,110 00
Hingham	7	14	9	8	78 67	40 33	160	10	-	1	1	52	Part tax,	10	-	1,100 00
Hull	1	3	-	6	-	38 00	17-19	9	-	1	1	82	Taxation,	10	-	600 00
Kingston	1	9	6	6	120 00	36 66	65-5	8-5	-	1	1	107	Taxation,	10	-	1,500 00
Lakeville	1	14	2	2	25 00	23 67	72	8	-	1	1	52	Taxation,	10	-	1,200 00
Marion	8	5	2	1	41 00	26 40	43-11	8-2	-	1	1	52	Taxation,	10	-	1,200 00
Marshfield	2	15	6	5	-	29 34	89	8-18	-	1	1	52	Taxation,	10	-	1,200 00
Mattapoisett	2	7	3	2	34 50	32 19	57-15	8-3	-	1	1	52	Taxation,	10	-	1,200 00
Middleborough	6	32	8	6	56 70	31 38	214	9	-	1	2	107	Taxation,	10	-	1,500 00
Pembroke	1	12	3	3	32 00	25 25	72	9	-	1	3	52	Taxation,	10	-	1,200 00
Plymouth	4	31	6	5	102 50	32 35	300	10-3	-	1	3	52	Taxation,	10	-	1,200 00
Plympton	1	4	1	1	80 00	29 00	36-15	7-7	-	1	2	52	Taxation,	10	-	1,200 00
Rochester	3	13	4	3	30 00	28 00	58	8-7	-	1	2	52	Taxation,	10	-	1,200 00
Rockland	8	18	3	3	58 00	34 53	169	9-5	-	1	2	52	Taxation,	10	-	1,200 00

Scituate . . .	1	15	8	3	111 11	24 17	117-10	9	1	1	45	Taxation, Taxation,	9	1,000 00
South Abington,	1	12	8	1	120 00	33 27	89	8-18	1	2	60	Taxation,	10	1,200 00
South Scituate .	4	9	6	5	36 66	27 50	89	8	-	-	-	-	-	-
Wareham . . .	4	18	1	1	59 00	29 00	121	8	1	2	59	Taxation,	9-10	1,100 00
W. Bridgewater,	3	9	7	5	42 00	32 00	80	8	-	-	-	-	-	-
Totals . . .	76	382	131	109	\$62 83	\$31 39	2995-4	8-17	16	31	1,024	-	-	\$17,858 00

SUFFOLK COUNTY — CONTINUED.

Boston . . .	135	982	550*	550*	\$254 28	\$72 95	2041	10-1	11	91	2,093	Taxation,	10	\$37,080 00†
Chelsea . . .	4	63	18	17	170 00	54 53	650	10	1	5	260	Taxation,	10	2,500 00
Revere . . .	1	12	4	3	80 00	37 50	87-5	10	-	-	-	-	-	-
Winthrop . . .	1	3	-	-	54 00	34 00	37	9-5	-	-	-	-	-	-
Totals . . .	141	1,060	572	570	\$249 21	\$71 34	2815-5	10	12	96	2,353	-	-	\$39,580 00

* As returned in April, 1890.

† Eleven Principals : six at \$3,750, five at \$2,850.

PLYMOUTH COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for schools, including board, fuel, care of fires and school-rooms, 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expenses of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Abington	\$9,578 96	\$7,800 00	\$268 54	—	\$60 00	\$812 20	—	—	\$559 91	—
Bridgewater	8,600 00	7,800 00	844 00	—	30 00	400 00	—	\$225 00	200 00	—
Brockton	26,276 75	22,700 00	539 38	—	140 00	800 00	—	1,100 00	2,295 00	—
Carver	1,200 00	1,200 00	62 00	—	—	2 65	—	462 75	14 26	—
Duxbury	3,564 73	2,500 00	241 52	—	35 00	152 83	—	—	873 51	—
E. Bridgewater,	5,700 00	5,000 00	204 86	—	64 00	241 41	—	2,214 19	457 14	—
Halifax	700 00	700 00	40 00	—	41 00	5 00	—	—	10 00	—
Hanover	3,264 00	2,750 00	140 00	—	25 00	—	—	—	837 00	—
Hanson	3,408 88	1,600 00	127 50	—	25 00	187 58	\$1,248 08	110 21	110 51	—
Hingham	13,381 35	9,976 41	360 00	—	—	219 58	—	876 75	2,448 61	—
Hull	726 85	800 00	27 00	—	15 00	3 00	—	—	6 13	—
Kingston	3,850 00	3,250 00	50 00	—	100 00	250 00	—	—	273 00	—
Lakeville	1,481 55	1,421 77	100 00	—	25 00	5 10	—	—	20 00	—
Marion	1,447 00	1,200 00	60 00	\$60 00	18 00	50 00	—	—	119 00	—
Marshfield	2,866 25	2,500 00	136 00	—	34 00	59 25	—	—	187 00	—
Mattapoisett	1,950 00	1,950 00	55 00	—	9 00	36 65	—	80 93	30 89	—
Middleborough,	10,438 88	9,000 00	396 00	—	27 00	247 56	—	254 00	513 82	—
Pembroke	1,763 00	1,500 00	172 31	—	18 00	77 90	—	—	111 03	—
Plymouth	17,837 00	16,384 00	500 00	500 00	68 00	120 00	3,000 00	2,000 00	882 00	—
Plympton	1,269 15	800 00	50 00	—	10 50	24 88	—	414 26	—	—
Rochester	1,200 00	1,515 65	—	—	—	20 00	—	—	60 65	—
Rockland	10,624 71	7,500 00	268 00	—	35 00	607 14	1,383 14	1,275 40	270 00	—
Scutuate	3,668 23	3,850 00	153 00	—	35 00	58 80	—	—	139 16	—

SCHOOL-RETURNS.

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South Abington,	5,376 22	4,000 00	340 50	-	-	-	-	578 83	-
South Scituate.	8,091 81	2,800 00	108 30	-	25 00	50 41	-	108 10	-
Wareham .	5,789 00	4,900 00	180 00	-	20 00	125 00	-	564 00	-
W. Bridgewater,	8,539 26	8,000 00	-	-	-	119 26	160 10	250 90	-
Totals . .	\$152,593 08	\$128,197 83	\$4,923 41	\$560 00	\$859 50	\$4,675 70	\$5,631 22	\$8,673 59	\$10,870 45

SUFFOLK COUNTY — CONTINUED.

Boston .	\$1,775,037 15	\$1,300,030 41	\$52,470 00	\$4,200 00	\$2,000 00	\$170,910 95	\$215,359 64	\$145,913 55	-
Chelsea .	54,026 72	46,056 39	1,733 33	1,733 33	79 00	1,270 91	-	516 50	\$1,094 00
Revere .	5,075 02	5,000 00	155 00	-	24 00	96 77	-	286 12	62 84
Winthrop .	1,664 88	1,500 00	65 00	-	14 00	46 13	-	-	94 09
Totals . .	\$1,835,803 77	\$1,352,646 80	\$54,423 33	\$5,933 33	\$2,117 00	\$172,324 76	\$215,359 64	\$146,716 17	\$1,250 93

BOARD OF EDUCATION.

PLYMOUTH COUNTY — CONCLUDED.

TOWNS.	ACADEMIES AND PRIVATE SCHOOLS.										
	Amount of local funds the income of which can be appropriated only for the support of Schools and Acad- emies.	Income of local funds.	Income of surplus rev- enue and other funds, including the dog tax, used at the option of the town.	Number of Acad- emies.	Whole No. attend- ing for the year.	Amount of tul- don paid.	No. of Private Schools.	Whole No. attend- ing for the year.	Estimated amt. of tuition.	Town's share of school-fund pay- able Jan. 25, 1881.	How much of said fund was used for appa- ratus and books of reference.
Abington	-	\$352 12	\$295 73	1	-	-	-	-	-	\$209 77	-
Bridgewater	\$5,300 00	17 00	324 44	1	-	-	1	20	\$500 00	217 03	\$100 00
Brocton	300 00	100 00	95 91	-	-	-	-	-	-	205 61	-
Carver	5,592 00	1,490 00	228 59	1*	-	-	-	-	-	221 21	-
Duxbury	24,600 00	-	-	-	-	-	-	-	-	184 14	17 20
East Bridgewater	-	-	-	-	-	-	-	-	-	187 56	-
Halifax	-	-	-	1	40	\$600 00	-	-	-	208 11	19 50
Hanover	3,000 00	172 00	99 00	1	-	-	-	-	-	231 78	5 00
Hanson	-	-	80 05	1	72	462 00	1	10	450 00	222 44	-
Hingham	29,600 00	1,758 85	-	1	-	-	8	40	800 00	168 79	-
Hull	-	-	-	-	-	-	-	-	-	205 48	-
Kingston	-	-	108 70	-	-	-	-	-	-	174 10	-
Lakeville	-	-	-	-	-	-	-	-	-	220 51	-
Marion	-	-	66 61	-	-	-	2	44	2,000 00	214 64	-
Marshfield	-	-	128 08	-	-	-	-	-	-	175 86	25 05
Mattapoisett	12,052 00	382 78	60 75	-	-	-	-	-	-	168 76	-
Middleborough	35,000 00	2,250 00	-	-	-	-	8	75	1,000 00	236 34	13 08
Pembroke	-	-	-	-	-	-	-	-	-	224 78	-
Plymouth	-	-	284 00	-	-	-	2	35	-	211 02	-
Plympton	-	-	85 26	-	-	-	-	-	-	211 90	18 45
Rochester	-	-	118 99	-	-	-	-	-	-	219 22	-
Rockland	-	-	-	-	-	-	-	-	-	243 74	-
Scituate	-	-	136 41	-	-	-	-	-	-	200 84	38 27

SCHOOL-RETURNS.

lxv

South Abington .	-	171 40	-	-	-	-	-	-	199 12	40 40
South Scituate .	-	102 85	-	-	-	-	-	-	231 22	-
Wareham .	-	303 00	-	-	-	-	14	100 00	203 67	4 15
West Bridgewater,	-	-	-	-	-	-	-	-	232 09	-
Totals . .	\$115,444 00	\$6,522 25	\$2,629 77	4	112	\$1,062 00	13	238	\$4,850 00	\$5,629 73 \$281 10

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SUFFOLK COUNTY — CONCLUDED.

Boston .	\$46,935 04	\$2,359 03	\$152,971 91	19	4,474	\$281,862 00	72	3,158	\$236,850 00	-
Chelsea .	-	-	-	-	-	-	2	370	3,600 00	-
Revere .	-	-	-	-	-	-	1	10	50 00	\$186 89
Winthrop .	-	-	-	-	-	-	-	-	-	162 29
Totals . .	\$46,935 04	\$2,359 03	\$152,971 91	19	4,474	\$281,862 00	75	3,538	\$240,500 00	\$349 18

* Academy and High School united.

PLYMOUTH COUNTY — CONCLUDED.

TOWNS.	ACADEMIES AND PRIVATE SCHOOLS.										
	Amount of local funds the income of which can be appropriated only for the support of Schools and Academies.	Income of local funds.	Income of surplus revenue and other funds, including the dog tax, used at the option of the town.	Number of Academies.	Whole No. attending for the year.	Amount of tuition paid.	No. of Private Schools.	Whole No. attending for the year.	Estimated amount of tuition.	Town's share of school fund payable Jan. 25, 1881.	How much of said fund was used for apparatus and books of reference.
Abington	-	\$352 12	\$295 73	1	-	-	-	-	-	\$209 77	-
Bridgewater	\$5,300 00	17 00	324 44	1	20	-	1	20	\$500 00	217 03	\$100 00
Brockton	300 00	100 00	95 91	1	-	-	-	-	-	205 61	-
Carver	5,592 00	1,490 00	228 59	1*	-	-	-	-	-	221 21	-
Duxbury	24,600 00	-	-	1	-	-	-	-	-	184 14	17 20
East Bridgewater.	-	-	-	1	-	-	-	-	-	187 56	-
Halifax	-	-	-	1	40	\$600 00	-	-	-	208 11	19 50
Hanover	3,000 00	172 00	99 00	1	-	-	-	-	-	231 78	5 00
Hanson.	-	-	80 05	1	72	462 00	1	10	450 00	222 44	-
Hingham	29,600 00	1,758 85	-	1	-	-	3	40	800 00	168 79	-
Hull	-	-	-	-	-	-	-	-	-	205 48	-
Kingston	-	-	108 70	-	-	-	-	-	-	174 10	-
Lakeville	-	-	-	-	-	-	-	-	-	220 51	-
Marion.	-	-	66 61	-	-	-	2	44	2,000 00	214 64	-
Marshfield	-	-	128 08	-	-	-	-	-	-	175 86	25 05
Mattapoisett.	12,052 00	382 78	60 75	-	-	-	-	-	-	168 76	-
Middleborough	35,000 00	2,250 00	-	-	-	-	3	75	1,000 00	236 34	13 08
Pembroke	-	-	-	-	-	-	-	-	-	224 78	-
Plymouth	-	-	234 00	-	-	-	2	35	-	211 02	-
Plympton	-	-	85 26	-	-	-	-	-	-	211 90	18 45
Rochester	-	-	113 99	-	-	-	-	-	-	219 22	-
Rockland	-	-	-	-	-	-	-	-	-	243 74	-
Scituate	-	-	136 41	-	-	-	-	-	-	200 84	38 27

SCHOOL-RETURNS.

lxv

South Abington .	-	171 40	-	-	-	-	-	-	-	199 12	40 40
South Scituate .	-	102 85	-	-	-	-	-	-	-	231 22	-
Wareham .	-	308 00	-	-	-	-	1	14	100 00	203 67	4 15
West Bridgewater,	-	-	-	-	-	-	-	-	-	232 09	-
Totals . .	\$115,444 00	\$2,629 77	4	112	\$1,062 00	13	238	\$4,850 00	\$5,629 73	\$281 10	

SUFFOLK COUNTY — CONCLUDED.

Boston .	\$46,935 04	\$2,359 03	\$152,971 91	19	4,474	\$281,862 00	72	3,158	\$236,850 00	-	-
Chelsea .	-	-	-	-	-	-	2	370	3,600 00	-	-
Revere .	-	-	-	-	-	-	1	10	50 00	\$186 89	-
Winthrop .	-	-	-	-	-	-	-	-	-	162 29	-
Totals . .	\$46,935 04	\$2,359 03	\$152,971 91	19	4,474	\$281,862 00	75	3,538	\$240,500 00	\$349 18	-

* Academy and High School united.

WORCESTER COUNTY.

TOWNS.	Population - Census, 1880.	Valuation - 1880.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town and 14 years of age.	No. of different pupils of all ages in the Public Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 8 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attendance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Ashburnham .	1,666	\$921,683	13	306	213	341	1	45	178	339	286	.85	14
Athol .	4,807	2,334,235	19	677	329	788	5	41	432	611	584	.95	19
Auburn .	1,317	474,110	7	229	140	240	2	9	134	194	155	.80	7
Barre .	2,418	1,472,225	13	345	256	410	2	23	179	310	279	.89	14
Berlin .	977	491,263	5	191	106	202	5	17	102	150	125	.83	5
Blackstone .	4,908	2,016,500	20	958	591	1,087	28	42	673	810	712	.87	23
Bolton .	903	486,918	7	148	114	204	6	35	111	144	131	.91	7
Boylston .	854	516,360	7	158	105	173	4	40	105	141	125	.88	7
Brookfield .	2,820	1,218,253	14	485	340	565	6	51	327	446	404	.90	14
Charlton .	1,900	1,028,280	12	299	211	356	11	52	217	269	239	.88	12
Clinton .	8,030	4,823,592	26	1,671	956	1,594	-	60	953	1,251	1,127	.90	29
Dana .	736	284,359	6	108	53	133	3	9	64	104	93	.89	6
Douglas .	2,241	1,118,597	13	412	248	405	17	33	220	363	291	.80	13
Dudley .	2,804	930,490	15	603	414	743	21	56	448	538	449	.83	15
Fitchburg .	12,405	9,508,584	48	2,344	1,353	2,635	18	237	1,343	1,993	1,771	.89	52
Gardner .	4,988	2,466,381	17	839	462	872	3	60	438	744	607	.82	19
Grafton .	4,030	1,958,288	20	810	536	907	13	23	491	808	646	.78	21
Hardwick .	2,233	1,031,245	14	454	290	490	4	39	296	431	375	.87	14
Harvard .	1,253	831,362	10	197	142	240	2	27	140	198	169	.85	10
Holden .	2,499	999,485	11	455	305	491	6	60	296	366	326	.88	11
Hubbardston .	1,386	803,429	11	222	181	290	4	46	181	236	212	.90	11
Lancaster .	2,008	2,139,765	10	279	196	356	6	89	196	258	216	.86	12
Leicester .	2,779	1,618,386	15	554	344	617	6	38	343	520	427	.82	15
Leominster .	5,776	3,747,885	20	881	505	1,001	5	79	558	887	818	.92	21
Lunenburg .	1,101	690,108	8	144	-	186	3	17	120	150	136	.90	12

SCHOOL-RETURNS.

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Mendon	1,094	612,941	8	196	125	243	5	42	186	202	197	-98	8
Milford	9,310	4,620,044	40	1,894	1,175	2,301	-	206	1,175	1,542	1,542	-90	43
Milbury	4,741	2,216,267	17	966	584	949	4	53	558	728	871	-92	18
New Braintree	610	470,547	6	116	74	192	1	15	74	99	90	-90	6
Northborough	1,676	1,115,477	8	249	159	297	5	26	171	233	199	-85	8
Northbridge	4,053	1,877,321	16	850	510	798	7	43	517	638	572	-89	16
North Brookfield	4,459	1,882,007	18	799	526	810	9	73	487	647	587	-91	19
Oakham	869	359,828	6	135	92	178	10	22	92	124	113	-91	6
Oxford	2,804	1,353,750	13	495	353	568	6	37	360	395	354	-89	13
Paxton	592	281,087	6	116	-	135	1	19	74	109	82	-75	6
Petersham	1,109	593,736	9	170	99	205	4	31	109	152	136	-89	9
Phillipston	621	271,980	6	119	77	133	1	16	71	92	90	-98	6
Princeton	1,100	846,942	9	166	-	190	4	87	95	150	133	-88	9
Royalston	1,192	684,130	11	194	143	249	3	68	143	191	177	-93	11
Rutland	1,060	491,258	10	229	134	256	2	84	134	190	171	-90	10
Shrewsbury	1,500	1,103,450	9	267	197	318	7	44	197	264	234	-89	10
Southborough	2,142	1,294,743	11	348	238	300	5	23	214	279	247	-89	11
Southbridge	6,465	2,983,557	28	1,279	-	1,375	6	35	774	1,025	902	-88	29
Spencer	7,466	3,178,040	27	1,492	821	1,521	2	74	773	1,202	1,022	-85	30
Sterling	1,414	921,848	12	227	131	245	-	41	147	204	188	-92	12
Sturbridge	2,062	1,010,900	15	376	263	434	3	15	251	315	277	-88	15
Sutton	3,105	1,367,598	16	723	415	619	7	36	810	452	348	-77	16
Templeton	2,789	1,071,227	14	542	320	684	14	46	604	467	425	-90	15
Upton	2,023	831,599	11	332	210	353	6	42	170	350	264	-87	11
Uxbridge	3,111	1,935,280	16	462	280	462	14	31	266	415	380	-91	16
Warren	3,889	2,031,191	18	861	510	818	2	56	506	597	514	-86	20
Webster	5,696	2,085,747	16	939	628	1,160	5	31	674	783	707	-90	17
Westborough	5,214	2,476,685	17	837	637	879	8	86	609	678	622	-90	20
West Foylston	2,994	1,032,280	11	614	338	619	11	48	343	401	356	-87	12
West Brookfield	1,917	865,352	11	337	203	399	2	39	214	307	246	-80	11
Westminster	1,652	812,484	13	295	177	309	4	34	171	236	203	-86	13
Winchendon	3,722	1,843,820	18	682	400	697	5	64	480	603	512	-85	19
Worcester	58,295	42,606,539	182	10,988	6,867	10,887	-	620	6,796	8,419	7,697	-91	204
Totals	226,885	\$131,024,438	989	42,094	25,076	44,842	344	8,265	26,240	34,868	30,961	-89	1,052

WORCESTER COUNTY.

TOWNS.	Population - Census, 1880.	Valuation - 1880.	No. of Public Schools.	No. of persons in town May 1, 1880, between 5 and 15 years of age.	No. of persons in town May 1, 1880, between 6 and 14 years of age.	No. of different pupils of all ages in the Public Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 5 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The per cent of attendance based upon the average No. belonging.	No. of teachers required by the Public Schools.
Ashburnham .	1,666	\$921,683	13	306	213	341	1	45	178	339	286	.85	14
Athol .	4,307	2,334,235	19	677	329	786	5	41	432	611	584	.95	19
Auburn .	1,317	474,110	7	229	140	240	2	9	134	194	155	.80	7
Barre .	2,418	1,472,225	13	345	256	410	2	23	179	310	279	.89	14
Berlin .	977	491,263	5	191	106	202	5	17	102	150	125	.83	5
Blackstone .	4,308	2,016,500	20	958	591	1,037	28	42	673	810	712	.87	23
Bolton .	903	486,918	7	148	114	204	6	35	111	144	131	.91	7
Boylston .	854	516,360	7	158	105	173	4	40	105	141	125	.88	7
Brookfield .	2,820	1,218,253	14	485	340	565	6	51	327	446	404	.90	14
Charlton .	1,900	1,028,280	12	299	211	356	11	52	217	269	239	.88	12
Clinton .	8,030	4,823,592	26	1,671	956	1,594	-	60	953	1,251	1,127	.90	29
Dana .	736	284,359	6	108	53	133	3	9	64	104	93	.89	6
Douglas .	2,241	1,118,597	13	412	248	405	17	33	220	363	291	.80	13
Dudley .	2,804	930,490	15	603	414	743	21	56	443	538	449	.83	15
Fitchburg .	12,405	9,508,584	48	2,344	1,353	2,635	18	237	1,343	1,993	1,771	.89	52
Gardner .	4,988	2,466,381	17	839	462	872	3	60	438	744	607	.82	19
Grafton .	4,080	1,958,288	20	810	536	907	13	23	491	808	646	.78	21
Hardwick .	2,233	1,031,245	14	454	290	490	4	39	296	431	375	.87	14
Harvard .	1,253	831,862	10	197	142	240	2	27	140	198	169	.85	10
Holden .	2,499	999,485	11	465	305	491	6	60	296	366	326	.88	11
Hubbardston .	1,386	803,429	11	222	181	290	4	46	181	236	212	.90	11
Lancaster .	2,008	2,139,765	10	279	196	356	6	39	196	258	216	.86	12
Leicester .	2,779	1,618,386	15	554	344	617	6	38	343	520	427	.82	15
Leominster .	5,776	3,747,885	20	881	505	1,001	5	79	558	887	818	.92	21
Lunenburg .	1,101	690,108	8	144	-	186	3	17	120	150	136	.90	12

SCHOOL-RETURNS.

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Mendon	1,094	612,941	8	196	125	243	5	42	186	202	197	-98	8
Milford	9,310	4,620,044	40	1,894	1,175	2,301	-	206	1,175	1,715	1,542	-90	43
Milbury	4,741	2,216,267	17	966	584	949	4	53	558	728	671	-92	18
New Braintree	610	470,547	6	116	74	132	1	15	74	99	90	-90	6
Northborough	1,676	1,115,477	8	249	159	297	5	26	171	233	199	-85	8
Northbridge	4,053	1,877,321	16	850	510	798	7	43	517	638	572	-89	16
North Brookfield	4,459	1,882,007	18	799	526	810	9	73	487	647	587	-91	19
Oakham	869	359,828	6	135	92	178	10	22	92	124	113	-91	6
Oxford	2,904	1,353,750	13	495	353	568	6	37	300	395	354	-89	13
Paxton	592	281,087	6	116	-	135	1	19	74	109	82	-75	6
Petersham	1,109	593,736	9	170	99	205	4	31	109	152	136	-89	9
Phillipston	621	271,980	6	119	77	133	1	16	71	92	90	-98	6
Princeton	1,100	846,942	9	166	-	190	4	87	95	150	133	-88	9
Royalston	1,192	684,130	11	194	143	249	3	88	143	191	177	-93	11
Rutland	1,060	491,258	10	229	134	256	2	84	134	190	171	-90	10
Shrewsbury	1,500	1,103,450	9	267	197	318	7	44	197	264	234	-89	10
Southborough	2,142	1,294,743	11	348	238	300	5	23	214	279	247	-89	11
Southbridge	6,465	2,983,557	28	1,279	-	1,375	6	35	774	1,025	902	-88	29
Spencer	7,466	3,178,040	27	1,492	821	1,521	2	74	773	1,202	1,022	-85	30
Sterling	1,414	921,848	12	227	131	245	-	41	147	204	188	-92	12
Sturbridge	2,062	1,010,900	15	376	263	434	3	15	251	315	277	-88	15
Sutton	3,105	1,367,598	16	723	415	619	7	36	810	452	348	-77	16
Templeton	2,789	1,071,227	14	542	320	684	14	46	604	467	425	-90	15
Upton	2,023	891,599	11	332	210	353	6	42	170	300	264	-87	11
Uxbridge	3,111	1,935,280	16	462	280	462	14	31	266	415	380	-91	16
Warren	3,889	2,051,191	18	861	510	818	2	56	506	597	514	-86	20
Webster	5,696	2,085,747	16	939	628	1,160	5	31	674	783	707	-90	17
Westborough	5,214	2,476,685	17	837	637	879	8	86	609	678	622	-90	20
West Boylston	2,994	1,032,280	11	614	338	619	11	48	343	401	356	-87	12
West Brookfield	1,917	865,352	11	337	203	399	2	39	214	307	246	-80	11
Westminster	1,652	812,484	13	295	177	309	4	34	171	236	203	-86	13
Winchendon	3,722	1,843,620	18	682	400	697	5	64	480	603	512	-85	19
Worcester	58,295	42,606,539	182	10,988	6,867	10,887	-	620	6,796	8,419	7,697	-91	204
Totals	226,885	\$131,034,438	989	42,094	25,076	44,842	344	3,265	26,240	34,868	30,961	-89	1,052

WORCESTER COUNTY — CONTINUED.

TOWNS.	HIGH SCHOOLS.															
	Whole No. of different male teachers in school year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools	No. of teachers who have graduated from Normal Schools.	A'v'ge wages per month of male teachers in Public Schools.	A'v'ge wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	No. of High Schools.	No. of teachers.	No. of pupils.	How supported.	Months.	Days.	Salary of Principal.
Ashburnham	3	15	-	-	\$47 33	\$25 33	77-8	7	-	1	6	37	Taxation,	9-8	-	\$700 00
Athol .	8	21	2	2	87 00	33 00	142-15	7-10	-	1	1	53	Taxation,	9-10	-	1,200 00
Auburn	2	8	1	1	32 00	24 00	51	7	-	1	1	-	-	-	-	-
Barre .	4	17	7	7	52 59	30 02	99-15	7-3	-	1	2	41	Taxation,	9	-	750 00
Berlin	1	9	4	3	-	32 00	36-5	7-5	-	1	-	-	-	-	-	-
Blackstone	1	27	4	1	96 29	30 64	172-15	8-13	-	1	2	65	Taxation,	9	-	866 66
Bolton	2	9	3	1	60 00	28 00	54-15	7-17	-	1	1	44	Not by tax,	9-15	-	600 00
Boylston	1	8	1	1	50 00	31 50	52	7-11	-	1	1	18	Taxation,	3	-	150 00
Brookfield	3	17	5	3	50 20	32 73	110-5	7-18	1	1	1	48	Taxation,	9-10	-	800 00
Charlton	7	13	1	1	33 00	27 92	90	7-10	-	1	2	71	Taxation,	9-15	-	1,500 00
Clinton	2	27	3	3	99 00	42 22	253-10	9-15	-	1	2	-	-	-	-	-
Dana .	1	9	1	1	-	20 34	42	7	-	1	-	-	-	-	-	-
Douglas	1	16	2	2	100 00	30 60	104-15	8-3	-	1	1	45	Taxation,	9	-	900 00
Dudley	6	16	-	-	43 67	29 40	120-10	8-1	1	1	1	42	Taxation,	10	-	1,000 00
Fitchburg	10	55	10	8	101 30	38 40	450	9-12	-	1	5	229	Taxation,	10	-	1,500 00
Gardner	1	21	5	4	115 00	41 25	128	7-7	-	1	2	88	Taxation,	10	-	1,150 00
Grafton	2	21	6	5	71 00	36 00	156	8-10	-	1	2	51	Taxation,	9	-	990 00
Hardwick	4	18	2	1	34 20	25 58	89-10	6-7	1	-	-	-	-	-	-	-
Harvard	1	12	1	-	32 00	30 05	64-10	6-9	-	1	-	-	-	-	-	-
Holden	1	17	5	2	60 00	32 18	84	7-8	-	1	1	41	Taxation,	9	-	510 00
Hubbardston	4	14	2	1	83 00	26 75	72	6-13	-	1	-	-	-	-	-	-
Lancaster	2	15	1	1	99 33	37 00	81	8	-	1	3	56	Taxation,	9	-	1,500 00
Leicester	3	15	5	5	57 43	33 83	125-15	8-8	-	1	1	50	Taxation,	9-15	-	800 00
Leominster .	2	20	-	-	110 00	36 15	160-15	8	-	1	2	75	Partly,	10	-	1,700 00
Lunenburg .	8	9	2	2	80 00	25 00	48	6	-	1	-	-	-	-	-	-

SCHOOL-RETURNS.

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	2	7	2	2	43	50	23	56	55	6-18		1	1	45	Taxation,	6	
Mendon	2	7	2	2	43	50	23	56	55	9	-	1	1	189	Taxation,	10	330 00
Milford	4	43	8	8	93	33	38	85	370	8-16	-	1	1	65	Taxation,	10	1,500 00
Millbury	2	27	4	4	6	43	39	68	150	7-10	-	1	1	53	Taxation,	10	1,400 00
New Braintree	1	9	4	3	3	00	27	75	45	8-8	-	2	2	32	Taxation,	9-5	1,000 00
Northborough	1	12	8	7	108	10	34	61-15	61-15	8-8	-	1	1	32	Taxation,	9-15	1,100 00
Northbridge	1	18	9	8	112	85	42	57	141-5	9-8	-	1	1	49	Taxation,	10	1,200 00
North Brookfield,	4	24	6	4	58	75	35	39	135-10	7-11	-	1	1	45	Taxation,	-	-
Oakham	2	8	1	1	24	00	24	00	39	6-10	-	1	1	45	Taxation,	10	700 00
Oxford	6	14	2	2	50	00	31	00	105-19	8-9	-	1	1	37	Taxation,	7-10	300 00
Paxton	3	7	4	2	28	00	26	80	40-10	6-14	-	1	1	-	-	-	-
Petersham	1	14	2	2	30	00	26	40	62-15	6-19	-	1	1	-	-	-	-
Phillipston	-	14	2	1	-	-	24	66	41	7-10	-	-	-	-	-	-	-
Princeton	4	4	-	4	30	80	25	80	58-10	6-10	-	-	-	-	-	-	-
Royalston	3	15	4	4	50	00	25	86	75-3	6-17	-	-	-	-	-	-	-
Rutland	4	11	-	-	34	25	23	88	60	6	-	-	-	-	-	-	-
Shrewsbury	1	12	2	1	74	68	30	20	78-12	8-14	-	1	1	40	Taxation,	9	672 00
Southborough	2	14	4	3	64	00	31	33	95-10	8-14	-	1	1	46	Taxation,	10	800 00
Southbridge	3	26	1	-	78	68	32	40	233-5	8-7	-	1	1	45	Taxation,	10	1,000 00
Spencer	4	35	16	4	68	00	33	65	218-10	8-4	-	1	3	97	Taxation,	9-16	1,100 00
Sterling	3	14	5	4	30	66	30	04	88-10	7-7	-	-	-	-	-	-	-
Sturbridge	1	17	1	1	24	00	25	48	128-10	8-12	1	-	-	-	-	-	-
Sutton	2	20	-	-	52	00	29	88	118-2	7-7	1	1	1	38	Taxation,	9	700 00
Templeton	1	19	-	-	115	00	30	00	107-10	7-10	-	1	1	84	Taxation,	10	1,150 00
Upton	3	12	3	3	59	37	33	70	84	7-15	-	1	1	57	Taxation,	9	883 34
Uxbridge	3	16	4	3	70	00	34	00	123-13	7-16	-	1	1	30	Taxation,	9-10	1,150 00
Warren	6	30	11	10	62	66	30	82	150-5	8-10	1	1	1	50	Taxation,	10	900 00
Webster	5	15	-	-	49	85	29	11	141-10	8-17	-	1	1	58	Taxation,	10	1,100 00
Westborough	1	22	6	6	92	28	41	20	137-01	8-1	-	1	1	94	Taxation,	9-15	900 00
West Boylston	3	15	6	2	52	00	36	00	83-10	7-16	-	1	1	110	Taxation,	9	810 00
West Brookfield	2	15	1	1	52	88	28	69	92-3	8-5	1	-	-	-	-	-	-
Westminster	1	14	7	6	65	00	27	92	92-5	7-2	1	1	1	79	Partly,	9	585 00
Winchendon	2	22	2	2	60	08	32	05	119-15	6-13	1	1	2	61	Taxation,	9	766 66
Worcester	14	190	116	116	149	46	49	97	1758-4	10	-	1	13	601	Taxation,	10	2,430 00
Totals	163	1,164	318	261	\$68 05	\$35 28	\$159-5	8-5	88	8,059	-	-	-	-	-	-	\$39,093 66

WORCESTER COUNTY — CONTINUED.

TOWNS.	Amount paid for all school purposes from money raised by taxation.	Amount raised by taxes for schools, including wages of teachers, board, fuel, care of fires and school rooms, for the school-year 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expenses of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Ashburnham	\$3,181 43	\$2,800 00	\$98 00	—	\$18 50	—	—	\$229 11	\$54 32	—
Athol	6,723 27	6,500 00	300 00	—	28 00	\$322 55	—	—	—	—
Auburn	1,150 00	1,150 00	73 50	—	20 00	9 50	—	—	50 00	—
Barre	4,313 88	4,600 00	189 00	—	14 00	12 75	—	—	35 00	—
Berlin	996 91	1,000 00	56 00	—	13 00	33 82	—	—	25 00	—
Blackstone	8,865 49	7,500 00	250 00	\$250 00	—	390 00	—	940 00	329 00	—
Bolton	1,286 71	1,200 00	85 50	—	13 00	30 53	\$1,379 95	—	1 80	—
Boylston	1,929 87	1,750 00	53 50	—	12 20	20 17	—	82 00	12 00	—
Brookfield	4,918 00	4,800 00	120 00	—	25 00	78 20	—	232 80	150 00	—
Charlton	2,871 44	3,000 00	134 75	—	9 00	8 30	—	—	38 16	—
Clinton	20,438 54	17,361 72	350 00	—	92 00	408 93	—	2,244 49	147 21	—
Dana	953 96	700 00	55 00	—	19 00	4 22	—	—	5 50	—
Douglas	4,348 10	4,100 00	100 00	—	20 00	245 00	—	225 00	—	—
Dudley	4,432 25	4,200 00	116 00	—	—	148 90	—	—	203 42	—
Fitchburg	35,533 92	30,500 00	1,800 00	1,800 00	25 00	2,609 02	—	2,904 01	1,551 84	—
Gardner	7,589 22	7,500 00	375 00	—	50 00	218 83	—	365 17	214 42	—
Grafton	8,612 85	7,100 00	722 35	—	25 00	192 77	—	233 10	339 63	—
Hardwick	6,053 20	2,300 00	147 55	—	18 00	11 05	3,550 30	—	26 30	—
Harvard	2,185 45	2,000 00	110 00	110 00	21 00	35 00	1,400 00	—	37 50	—
Holden	4,883 28	2,818 57	181 50	—	9 00	355 30	—	981 28	83 43	—
Hubbardston	2,300 00	2,000 00	95 00	—	20 00	62 90	—	—	40 00	—
Lancaster	6,455 61	4,633 36	334 26	—	29 40	—	—	154 26	90 48	—
Leicester	6,202 72	5,400 00	190 17	—	25 00	84 32	—	391 93	111 30	—
Leominster	10,549 50	9,350 00	274 50	—	75 00	340 00	—	410 24	99 76	—
Lunenburg	1,201 50	1,200 00	96 38	—	14 00	43 25	—	—	14 65	—

SCHOOL-RETURNS.

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Mendon . . .	1,538 30	1,300 00	75 00	75 00	82 00	13 91	-	-	13 64	-
Milford . . .	21,623 36	18,702 00	1,415 00	1,350 00	10 00	350 00	-	-	717 20	-
Millbury . . .	9,155 47	8,000 00	435 00	-	30 00	428 23	-	-	262 24	-
New Braintree, . .	1,617 40	1,345 75	75 00	-	16 00	53 00	-	109 88	17 77	-
Northborough . .	5,814 31	3,200 00	110 00	-	30 00	43 01	1,948 33	-	482 97	-
Northbridge . . .	8,381 00	7,400 00	205 00	-	50 00	150 00	-	25 00	700 00	-
N. Brookfield . .	9,366 24	7,000 00	312 50	-	50 00	249 32	-	1,511 48	242 94	-
Oakham . . .	1,120 80	750 00	94 00	-	10 00	22 40	-	-	24 89	16 00
Oxford . . .	4,841 85	4,000 00	57 00	-	50 00	126 84	-	-	385 00	-
Paxton . . .	1,167 21	1,000 00	65 00	-	8 00	31 13	-	-	45 99	-
Petersham . . .	1,718 98	1,851 00	125 00	-	18 00	100 21	-	-	94 48	-
Phillipston . . .	1,403 01	800 00	55 00	-	16 00	5 00	-	244 53	15 00	-
Princeton . . .	1,569 29	1,600 00	101 51	-	5 50	11 04	-	416 71	29 94	-
Royalston . . .	1,500 00	1,500 00	112 25	-	21 40	190 83	-	405 52	20 57	-
Rutland . . .	1,707 33	1,600 00	96 50	-	12 00	85 81	-	-	59 87	187 50
Shrewsbury . . .	5,434 52	3,000 00	200 00	-	-	144 81	1,773 15	-	127 46	-
Southborough . .	4,823 33	4,500 00	150 00	-	40 00	242 50	-	1,238 35	191 15	-
Southbridge . . .	11,335 00	10,314 00	355 00	-	18 90	119 00	-	320 00	131 00	-
Spencer . . .	15,818 95	10,350 00	291 75	-	35 00	181 36	4,153 00	457 98	349 86	-
Sterling . . .	8,032 64	2,800 00	122 50	-	15 00	-	1,358 65	-	29 92	-
Sturbridge . . .	3,713 42	3,500 00	266 71	-	13 15	28 92	-	-	83 08	-
Sutton . . .	4,250 79	4,150 00	150 00	-	-	30 67	-	-	-	-
Templeton . . .	4,672 95	4,500 00	140 50	-	35 00	27 94	-	213 36	57 48	-
Upton . . .	4,308 45	4,000 00	175 50	-	24 00	95 41	-	269 47	17 47	-
Uxbridge . . .	5,927 90	6,000 00	140 00	-	75 00	35 00	-	-	50 00	-
Warren . . .	7,342 64	6,000 00	285 27	-	40 46	259 00	-	191 08	313 19	-
Webster . . .	8,300 00	6,300 00	300 00	-	25 00	138 25	1,893 17	-	528 01	-
Westborough . .	9,436 00	8,000 00	600 00	600 00	-	139 00	-	491 00	206 00	-
W. Boylston . . .	3,591 05	3,300 00	161 77	-	-	326 63	-	-	46 46	-
W. Brookfield . .	3,310 54	3,000 00	133 00	-	19 18	52 75	-	-	44 73	-
Westminster . . .	3,151 70	2,750 00	109 25	-	-	91 86	-	38 00	162 59	174 00
Winchendon . . .	5,518 38	4,824 63	267 75	-	51 05	165 87	-	-	209 08	-
Worcester . . .	143,827 97	125,305 90	3,313 34	2,430 00	183 37	8,577 38	23,731 49	1,465 55	4,982 43	-
Totals . . .	\$477,297 88	\$408,106 93	\$16,804 06	\$6,615 00	\$1,529 11	\$18,162 39	\$41,188 04	\$16,790 82	\$14,293 13	\$414 50

WORCESTER COUNTY — CONCLUDED.

TOWNS.	ACADEMIES AND PRIVATE SCHOOLS.										
	Amount of local funds the income of which can be appropriated only for the support of Schools and Acad- emies.	Income of local funds.	Income of surplus rev- enue and other funds, including the dog tax, used at the option of the town.	Number of Acad- emies.	Whole No. attend- ing for the year.	Amount of tu- tion paid.	No. of Private Schools.	Whole No. attend- ing for the year.	Estimated amt. of tuition.	Town's share of school-fund pay- able Jan. 25, 1881.	How much of said fund was used for appara- tus and books of reference.
Ashburnham	\$127,602 31	\$6,585 46	\$116 95	1	114	\$735 00	1	8	\$18 40	\$235 63	\$53 70
Athol	-	-	214 04	-	-	-	-	-	-	212 95	34 00
Auburn	-	-	113 91	-	-	-	-	-	-	223 72	-
Barre	-	-	178 61	-	-	-	-	-	-	185 24	90 00
Berlin	2,020 00	121 20	86 89	-	-	-	-	-	-	217 20	-
Blackstone	-	-	357 31	-	-	-	2	30	250 00	243 56	-
Bolton	12,000 00	720 00	-	-	-	-	-	-	-	217 75	-
Boylston	-	-	-	-	-	-	-	-	-	216 59	-
Brookfield	-	-	166 80	-	-	-	-	-	-	195 58	-
Charlton	2,035 00	101 40	-	-	-	-	-	-	-	233 19	-
Clinton	-	-	-	-	-	-	1	40	600 00	254 07	-
Dana	-	-	30 20	-	-	-	-	-	-	211 22	-
Douglas	941 33	56 48	-	-	-	-	-	-	-	240 58	-
Dudley	6,000 00	300 00	151 52	1	14	275 00	1	30	400 00	255 91	221 86
Fitchburg	-	-	119 72	-	-	-	-	-	-	218 45	-
Gardner	1,000 00	50 00	255 89	-	-	-	-	-	-	223 93	-
Grafton	1,000 00	65 00	-	-	-	-	-	-	-	228 74	-
Hardwick	200 00	12 00	108 08	-	37	300 00	-	-	-	237 77	-
Harvard	-	-	-	1	-	-	-	-	-	222 45	-
Holden	3,366 00	202 00	194 44	-	-	-	-	-	-	246 45	26 25
Hubbardston	1,200 00	72 00	-	-	-	-	-	-	-	222 93	-
Lancaster	-	-	-	-	-	-	1	6	100 00	176 36	64 79
Leicester	51,000 00	60 00	260 13	1	-	-	-	-	-	204 59	52 05
Leominster	11,433 33	650 00	-	-	-	-	-	-	-	181 45	54 06
Lunenburg	-	-	93 24	-	-	-	-	-	-	214 83	-

SCHOOL-RETURNS.

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Mendon	107 94	-	-	-	-	-	3	65	-	222 34	-
Milford	214 04	-	-	-	-	-	2	85	1,100 00	303 11	60 00
Millbury	-	-	-	-	-	-	-	-	550 00	230 76	22 10
New Braintree	-	-	-	-	-	-	-	-	-	209 18	18 50
Northborough	-	-	-	-	-	-	-	-	-	170 49	-
Northbridge	-	-	-	-	-	-	-	-	-	225 20	-
North Brookfield	-	-	-	-	-	-	1	27	75 00	229 01	-
Oakham	191 26	-	-	-	-	-	-	-	-	213 16	13 50
Oxford	92 72	-	-	-	-	-	-	-	-	196 26	-
Paxton	-	-	-	-	-	-	-	-	-	212 40	6 50
Petersham	79 47	-	-	-	-	-	-	-	-	212 40	-
Phillipston	73 11	-	-	-	-	-	-	-	-	212 19	-
Princeton	-	-	-	-	-	-	1	23	50 00	215 80	-
Royalston	70 99	-	-	-	-	-	-	18	-	219 61	60 85
Rutland	-	-	-	-	-	-	1	-	63 00	221 47	-
Shrewsbury	-	-	-	-	-	-	-	-	-	172 45	36 40
Southborough	84 50	-	-	-	-	-	2	23	800 00	184 84	273 90
Southbridge	-	-	-	-	-	50	-	-	-	204 22	-
Spencer	-	-	-	-	-	-	1	40	160 00	243 40	12 00
Sterling	-	-	-	-	-	-	1	19	190 00	223 71	-
Sturbridge	-	-	-	-	-	-	-	-	-	253 27	13 50
Sutton	-	-	-	-	-	-	1	40	200 00	219 86	54 88
Templeton	139 34	-	-	-	-	-	-	-	-	195 68	48 89
Upton	-	-	-	-	-	-	1	30	375 00	231 03	-
Uxbridge	196 95	-	-	-	-	-	-	-	-	196 94	20 00
Warren	-	-	-	-	-	-	1	23	140 00	226 49	30 00
Webster	259 60	-	-	-	-	-	2	26	350 00	245 78	61 44
Westborough	-	-	-	-	-	-	-	-	-	225 32	41 25
West Boylston	-	-	-	-	-	-	-	-	-	205 23	-
West Brookfield	-	-	-	-	-	-	-	-	-	234 62	31 15
Westminster	-	-	-	-	-	-	-	-	-	226 16	10 00
Winchendon	-	-	-	-	-	-	3	80	130 00	210 57	17 71
Worcester	-	-	-	-	-	200	2	1,400	1,500 00	-	-
Totals	1,458 50	81 30	8	415	\$15,810 00	29	2,013	\$7,771 40	\$12,518 09	\$1,428 78	
	\$235,491 47	\$9,593 90									

RECAPITULATION.

COUNTIES.	Population - Census, 1880.	Valuation - 1881.	No. of Public Schools.	No. of persons in town and 15 years of age.	No. of persons in town May 1, 1880, between 8 and 14 years of age.	No. of different pupils of all ages in the Public Schools during the school-year.	No. attending within the year under 5 years of age.	No. attending within the year over 15 years of age.	No. attending within the year between 5 and 14 years of age.	Average No. belonging to all the Schools.	Average attendance in all the Public Schools during the school-year.	The percent of attendance based upon the average No. belonging.
Barnstable . .	31,945	\$15,555,286	164	5,675	3,250	6,240	21	806	3,352	5,305	4,637	.87
Berkshire . .	69,049	34,197,842	352	14,011	7,918	14,567	178	1,048	8,316	11,041	9,894	.88
Bristol . .	139,111	103,294,547	471	24,584	11,451	25,338	126	1,507	15,373	19,410	17,308	.89
Dukes . .	4,305	3,190,798	25	602	382	695	11	84	360	611	544	.89
Essex . .	244,640	162,418,423	811	43,028	20,796	42,206	155	2,830	24,001	35,319	30,988	.88
Franklin . .	36,000	15,808,509	251	6,458	4,319	7,157	132	573	3,842	5,616	5,018	.89
Hampden . .	104,117	69,758,223	373	19,125	11,643	18,302	130	1,267	10,130	13,182	11,802	.90
Hampshire . .	47,235	25,285,744	277	8,785	5,622	9,423	129	759	5,485	7,460	6,663	.89
Middlesex . .	317,951	268,986,013	973	55,736	24,620	58,998	239	4,856	28,254	47,193	42,980	.91
Nantucket . .	3,726	2,352,123	11	560	304	425	-	28	265	415	373	.90
Norfolk . .	96,462	89,424,009	422	17,225	9,723	18,819	88	1,309	10,310	15,262	13,603	.88
Plymouth . .	74,024	41,597,896	338	12,892	7,412	13,731	130	988	7,416	11,730	10,315	.88
Suffolk . .	387,626	685,321,125	544	61,905	2,510	64,501	2	5,024	26,620	54,619	48,222	.88
Worcester . .	226,885	131,054,438	989	42,094	25,076	44,842	344	3,265	26,240	34,868	30,961	.89
Totals . .	1,733,086	1,648,239,976	6,001	312,680	135,026	325,239	1,685	24,344	169,964	262,031	233,108	.89

SCHOOL-RETURNS.

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RECAPITULATION — CONTINUED.

COUNTIES.	No. of teachers required by the Public Schools.	Whole No. of different male teachers in school-year.	Whole No. of different female teachers in school-year.	No. of teachers who have attended Normal Schools.	No. of teachers who have graduated from Normal Schools.	A'ge wages per month of male teachers in Public Schools.	A'ge wages per month of female teachers in Public Schools.	Aggregate of months all the Public Schools have been kept during the school-year.	Average No. of months the Public Schools have been kept for the entire year.	No. of Schools kept less than six months each.	HIGH SCHOOLS.				Salary of Principal.
											No. of High Schools.	No. of teachers.	No. of pupils.		
Barnstable	170	52	156	34	31	\$59 83	\$30 12	1,337-5	8-8	4	10	13	501	\$8,185 00	
Berkshire	139	99	429	55	39	41 20	27 24	2,848-2	8-2	9	11	21	741	10,577 00	
Bristol	560	82	585	135	114	83 70	52 15	4,377-10	9-6	3	10	35	1,196	11,600 00	
Dukes	26	15	20	-	-	36 44	25 12	172-5	6-18	-	1	2	43	510 00	
Essex	906	87	930	254	219	110 73	41 82	7,945-9	9-16	2	26	75	2,270	32,830 50	
Franklin	262	43	329	34	24	39 18	25 12	1,705-19	6-16	8	7	13	321	4,350 67	
Hampden	425	61	491	119	83	72 66	36 68	3,274-4	8-16	1	9	33	1,082	12,900 00	
Hampshire	288	57	845	50	44	42 55	6 85	2,137-17	7-14	5	11	21	665	8,792 07	
Middlesex	1,801	164	1,339	397	322	107 32	46 57	8,799-7	9-1	6	38	119	3,874	48,342 99	
Nantucket	13	2	15	1	1	90 00	23 50	95-15	8-16	2	1	2	61	900 00	
Norfolk	456	92	482	136	112	91 70	40 43	3,970-1	9-8	-	23	47	1,710	27,347 25	
Plymouth	359	76	382	131	109	62 83	31 39	2,995-4	8-17	-	16	31	1,024	17,858 00	
Suffolk	1,198	141	1,060	572	572	249 21	71 34	2,815-5	10	-	12	96	2,353	39,580 00	
Worcester	1,052	163	1,164	318	261	68 05	35 28	8,159-5	8-5	9	40	88	3,059	39,093 66	
Totals	7,155	1,134	7,727	2,236	1,931	\$85 54	\$38 49	50,633-6	8-9	49	215	595	18,900	\$262,867 14	

RECAPITULATION — CONTINUED.

COUNTIES.	Amount paid for all school purposes from taxation.	Amount raised by taxes for Schools, including wages of teachers, board, fuel, care of fires and school-rooms for the school-year 1880-81.	Expense of supervision by school-committee.	Salary of Superintendent of Public Schools.	Expenses of printing reports, etc.	Expense of sundries, — books, stationery, etc.	Amount expended for new school-houses.	Amount expended for alterations and permanent improvements.	Amount expended for ordinary repairs.	Amount of voluntary contributions for Public Schools.
Barnstable .	\$63,381 66	\$54,998 55	\$2,197 34	\$925 00	\$336 00	\$1,413 38	\$10,145 12	\$2,327 40	\$2,394 43	\$64 00
Berkshire .	143,033 08	105,913 86	4,047 18	1,850 00	570 57	4,275 39	28,102 28	2,030 39	3,796 73	453 25
Bristol .	313,782 60	266,555 13	8,746 88	5,650 00	802 99	14,853 46	36,469 77	15,171 46	10,167 03	27 00
Dukes .	6,096 02	5,820 00	313 25	—	81 15	75 49	—	35 51	279 90	—
Essex .	602,091 51	471,656 43	15,301 08	8,601 67	2,017 85	21,626 30	80,291 36	15,707 61	22,246 99	1,200 00
Franklin .	60,303 02	52,383 00	2,383 20	—	313 13	1,639 55	4,475 00	2,894 24	2,273 13	528 50
Hampden .	235,683 29	194,660 37	8,637 70	6,260 00	456 64	8,525 23	13,815 02	10,282 29	11,771 58	796 70
Hampshire .	87,209 65	70,853 12	3,364 13	1,000 00	356 36	1,937 74	6,090 98	3,941 45	3,634 81	1,177 12
Middlesex .	901,423 73	770,279 86	24,554 72	16,882 22	2,331 70	30,937 53	87,825 79	29,531 57	30,666 52	320 56
Nantucket .	4,437 61	4,314 55	100 00	—	30 00	426 42	600 00	—	45 00	—
Norfolk .	288,378 53	244,827 68	13,517 51	8,215 00	648 45	10,835 06	5,901 15	13,443 17	7,843 53	298 00
Plymouth .	152,593 08	128,197 83	4,923 41	560 00	859 50	4,675 70	5,631 22	8,673 59	10,870 45	—
Suffolk .	1,835,803 77	1,352,646 80	54,423 33	5,933 33	2,117 00	172,324 76	215,359 64	146,716 17	1,250 93	—
Worcester .	477,297 88	408,106 93	16,804 06	6,615 00	1,529 11	18,162 39	41,188 04	16,790 82	14,293 13	414 50
Totals .	\$5,171,485 43	\$4,130,714 11	\$159,313 79	\$62,492 22	\$12,450 45	\$291,728 40	\$535,895 37	\$267,545 67	\$121,534 16	\$5,279 63

SCHOOL-RETURNS.

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RECAPITULATION — CONCLUDED.

COUNTIES.	ACADEMIES AND PRIVATE SCHOOLS.										
	Amount of local funds the income of which can be appropriated only for the support of Schools and Academies.	Income of local funds.	Income of surplus revenue and other funds, including the dog tax, used at the option of the town.	Number of Academies.	Whole No. attending for the year.	Amount of tuition paid.	No. of Private Schools.	Whole No. attending for the year.	Estimated amount of tuition.	Town's share of school-fund payable Jan. 25, 1881.	How much of said fund was used for apparatus and books of reference.
Barnstable . . .	\$31,000 00	\$1,650 00	\$1,632 41	2	23	\$250 00	1	8	\$180 00	\$3,503 35	\$124 18
Berkshire . . .	19,316 99	1,310 64	1,225 64	2	21	1,200 00	16	493	20,259 00	7,067 06	426 04
Bristol . . .	129,700 00	8,915 02	3,466 60	3	192	12,960 00	34	1,294	15,239 00	3,443 54	249 88
Dukes . . .	—	—	35 32	1	60	200 00	—	—	—	1,056 01	3 68
Essex . . .	424,981 21	22,827 57	4,799 17	6	634	26,255 00	44	1,822	20,753 00	6,725 74	148 40
Franklin . . .	73,094 50	4,921 89	1,265 33	4	272	1,101 25	8	255	4,612 00	5,596 97	177 82
Hampden . . .	212,680 92	11,986 10	2,443 23	3	352	10,157 38	38	3,189	14,037 37	4,363 94	327 78
Hampshire . . .	377,691 68	19,685 97	1,432 40	3	572	53,981 55	9	257	10,000 00	4,942 25	116 75
Middlesex . . .	174,709 42	9,168 08	3,763 16	9	659	24,432 00	69	4,453	43,935 00	9,653 01	647 45
Nantucket . . .	38,000 00	2,080 00	—	1	78	610 00	1	78	610 00	205 48	60 00
Norfolk . . .	282,458 23	9,307 18	3,449 77	3	205	3,960 00	12	204	5,180 00	4,400 46	335 11
Plymouth . . .	115,444 00	6,522 25	2,629 77	4	112	1,062 00	13	238	4,850 00	5,629 73	281 10
Suffolk . . .	46,935 04	2,359 03	152,971 91	19	4,474	281,862 00	75	3,538	240,500 00	349 18	—
Worcester . . .	235,491 47	9,593 90	3,957 65	8	415	15,810 00	29	2,013	7,771 40	12,518 09	1,428 78
Totals . . .	\$2,161,503 46	\$110,327 63	\$183,072 36	68	8,069	\$433,841 18	349	17,842	\$387,926 77	\$69,007 81	\$4,326 97

EVENING SCHOOLS.

CITIES AND TOWNS.	No. of Schools.	ATTENDANCE.			TIME. Number of Evenings.	No. of Teachers.	Expense.
		Males.	Females.	Average.			
Andover . .	1	39	36	60	43	2	\$175 00
Boston . .	24	3,013	*	1,588	101	131	39,483 78
Brookline . .	1	-	-	19	41	2	200 80
Cambridge . .	3	243	70	134	50	11	1,144 50
Clinton . .	1	53	8	35	33	1	258 18
{	1	55	48	24	49	7	165 46
Dighton . .	1	6	10	12	25	2	25 00
Fall River . .	16	811	292	457	83	32	2,903 38
Fitchburg . .	1	29	10	19	45	4	280 00
Haverhill . .	-	168	153	77	42	20	576 50
Holyoke . .	7	352	226	265	40	25	988 87
Hyde Park . .	2	38	17	34	119	3	524 00
Ipswich . .	1	-	-	23	54	1	110 00
Lawrence . .	3	470	218	251	50	25	1,784 60
Lowell . .	5	871	438	500	62	57	4,526 53
Malden . .	1	24	50	70	36	2	602 04
Milford . .	1	50	-	38	-	1	202 00
Millbury . .	1	32	12	20	50	1	52 00
New Bedford . .	2	115	100	85	66	7	1,100 00
Newburyport . .	1	-	60	25	36	5	118 66
Newton . .	1	27	18	31	49	5	396 01
Peabody . .	1	44	-	27	40	3	250 00
Salem . .	3	199	178	183	123†	12	2,431 50
Springfield . .	2	190	131	123	60	9	839 00
Stoneham . .	1	23	16	21	24	2	88 25
Sutton . .	2	104	47	96	154	3	175 00
Taunton . .	2	192	60	85	42	9	999 28
Waltham . .	3	144	102	31	39	6	548 28
Westfield . .	1	122	15	42	36	6	205 80
Worcester . .	8	438	127	390	67	14	2,434 58
Totals 29 cities and towns . .	97	7,852	2,442	4,765	1,659	408	\$63,589 00

* Included with the males.

† 41 of these were in Drawing School.

SCHOOL-RETURNS.

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RETURNS OF SCHOOLS IN STATE INSTITUTIONS FOR THE YEAR ENDING JULY 31, 1881.

STATE INSTITUTIONS.	No. of Schools in the Institution.	No. of different Schools of all ages during the year.	Average attendance during the year.	No. under 5 years of age attending School.	No. over 15 years of age attending School.	No. between 5 and 15 years of age remaining in the institution July 31, 1881.	No. of Teachers during the year.		Wages of Teachers per month.		Length of each School in Months.
							Males.	Females.	Males.	Females.	
State Industrial School at Lancaster .	2	99	61	-	41	50	-	2	-	\$25 00*	Three h'rs per day.
State Primary School at Monson .	9	581	364	23	6	336	-	9	-	20 83†	10ms. 15d.
State Reform School at Westborough .	4	265	178	-	19	151	9	3	\$58 33 } 40 00 }	23 00 }	12ms.

* With board.

† With exception of the principal, who has \$41.67 per month.

GRADUATED TABLES—FIRST SERIES.

THE following Table shows the sums appropriated by the several cities and towns in the State, for the education of each child between five and fifteen years of age. The income of the surplus revenue and of other funds held in a similar way, when appropriated to schools, is added to the sum raised by taxes; and these sums constitute the amount reckoned as appropriations. The income of such school-funds as were given and are held on the express condition that their income shall be appropriated to schools, is not included. Such an appropriation of their income, being necessary to retaining the funds, is no evidence of the liberality of those holding the trust. But if a town appropriates the income of any fund to its public schools, which may be so appropriated or not, at the option of the voters, or when the town has a legal right to use such income in defraying its ordinary expenses, then such an appropriation is as really a contribution to common schools as an equal sum raised by taxes. On this account the surplus revenue, and sometimes other funds, are to be distinguished from local school-funds as generally held. The income of the one *may* be appropriated to schools, or not, at the pleasure of the town; the income of the other *must* be appropriated to schools by the condition of the donation. Funds of the latter kind are usually donations made to furnish means of education in addition to those provided by a reasonable taxation. Committees are expected, in their annual returns, to make this distinction in relation to school-funds.

Voluntary contributions are not included in the amount which is divided in order to ascertain the sum appropriated to each child. In many towns such contributions, however liberal, are not permanent, and cannot be relied upon as a stated provision. They are often raised and applied to favor particular districts or schools, or classes of scholars, and not to benefit equally all that attend the public schools. Besides, the value of board and fuel gratuitously furnished is determined by the mere estimate of individuals, and is therefore uncertain; while the amount raised by taxes, being in money, has a fixed and definite value, and is a matter of record. Still the contributions voluntarily made are exhibited in a separate column of the Table, as necessary to a complete statement of the provision made by the towns for the education of their children.

The Table exhibits the rank of each city or town in the State, in respect to its liberality in the appropriation of money to its schools, as compared with other cities and towns for the year 1880-81, also its rank in a similar scale for 1879-80. It presents the sum appropriated to each child between five and fifteen.

SCHOOL-RETURNS.

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GRADUATED TABLES — (FOR THE STATE) — FIRST SERIES.

Table showing the Comparative Amount of Money appropriated by the different Towns in the State for the Education of each Child in the Town, between the Ages of 5 and 15 Years.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	NABANT	\$42 16 1	\$4,679 85	-	\$4,679 85	111	-
2	2	Brookline	27 62 8	36,000 00	-	36,000 00	1,303	-
3	3	Boston	25 18 2	1,300,090 41	\$152,971 91	1,453,062 32	57,703	-
5	4	Milton	24 30 5	13,391 95	-	13,391 95	551	-
4	5	Newton	21 98 7	69,249 59	712 50	69,962 09	3,182	-
8	6	Winchester	21 31 4	12,000 00	-	12,000 00	563	-
7	7	Arlington	20 88 5	17,000 00	-	17,000 00	814	-
7	8	Lexington	20 00	8,400 00	-	8,400 00	420	-
13	9	Dedham	19 84 7	21,435 00	-	21,435 00	1,080	-
9	10	Medford	19 40 8	23,367 00	-	23,367 00	1,204	-
15	11	Swampscott	19 00 6	6,500 00	-	6,500 00	342	-
14	12	Weston	18 98 4	3,550 00	-	3,550 00	187	-
20	13	Belmont	18 45 2	4,650 00	-	4,650 00	252	-
23	14	New Bedford	17 71 1	71,640 00	673 66	72,313 66	4,083	-
11	15	Watertown	17 56 7	15,020 00	-	15,020 00	855	-
28	16	Needham	17 38 4	15,000 00	384 75	15,384 75	885	\$150 00
10	17	Lancaster	16 60 7	4,633 36	-	4,633 36	279	-
12	18	Waltham	16 11 9	34,363 28	228 28	34,591 56	2,146	-

Showing the Comparative Amount of Money appropriated by the different Towns in the State—Continued.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by town for each child between 5 and 15 yrs. of age	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
21	19	Reading	\$16 06.4	\$8,000 00	—	\$8,000 00	498	—
33	20	Kingston	15 47 8	3,250 00	\$108 70	3,358 70	217	—
27	21	Malden	15 37	32,000 00	—	32,000 00	2,082	—
173	22	Hull	15 09 4	800 00	—	800 00	53	—
30	23	Framingham	15 05 7	14,800 00	317 49	15,117 49	1,004	—
17	24	Cambridge.	14 98.2	140,686 60	—	140,686 60	9,390	—
72	25	Carlisle	14 58	700 00	72 75	772 75	53	—
36	26	Salem	14 53.2	69,400 84	1,252 15	70,652 99	4,862	—
31	27	Groton	14 50.6	4,700 00	—	4,700 00	324	—
40	28	Walpole	14 38.2	5,300 00	—	5,300 00	369	—
34	29	Hingham	14 33.4	9,976 41	—	9,976 41	696	—
44	30	Barnstable.	14 01.8	9,000 00	835 96	9,335 96	666	—
26	31	Springfield.	13 98.1	82,000 00	—	82,000 00	5,865	—
56	32	Cohasset	13 87.8	5,500 00	217 64	5,717 64	412	—
45	33	Barre.	13 85.1	4,600 00	178 61	4,778 61	345	—
38	34	North Andover	13 80.5	8,000 00	—	8,000 00	588	—
50	35	Hyde Park.	13 56.2	19,000 00	—	19,000 00	1,401	—
122	36	Woburn	13 45.9	30,000 00	—	30,000 00	2,229	—
87	37	Lincoln	13 42.3	2,000 00	—	2,000 00	149	—
75	38	Holbrook	13 41 8	4,700 00	—	4,844 00	361	—
57	39	Uxbridge	13 41.3	6,000 00	144 00	6,196 95	462	—
19	40	Quincy	13 39.8	26,100 00	196 95	26,100 00	1,948	—
37	41	Norwood	13 37.9	5,900 00	—	5,900 00	441	—
18	42	Somerville	13 30.3	67,233 00	—	67,233 00	5,054	—
52	43	Westfield	13 27	17,259 68	442 82	17,702 50	1,334	—
43	44	Stoneham	13 24.7	11,750 00	—	11,750 00	887	—
								\$110 00

SCHOOL-RETURNS.

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89	45	Southborough	13 17.4	4,500 00	84 50	4,584 50	348	-
74	46	Boxborough	13 10	655 01	-	655 01	50	-
46	47	Lowell	13 09.4	119,430 00	-	119,430 00	9,121	-
35	48	Plymouth	13 06.4	16,384 00	234 00	16,618 00	1,272	-
32	49	Fitchburg	13 06.3	30,500 00	119 72	30,619 72	2,344	-
96	50	Methuen	13 04.3	8,700 00	-	8,700 00	667	-
42	51	Everett	12 95.8	9,899 88	-	9,899 88	764	-
24	52	Concord	12 92.7	8,221 50	-	8,221 50	636	-
95	53	Longmeadow	12 91.7	2,950 00	163 09	3,113 09	241	-
16	54	Haverhill	12 85.7	45,000 00	-	45,000 00	3,500	-
22	55	Northborough	12 85.1	3,200 00	-	3,200 00	249	-
51	56	Chelsea	12 62.5	46,056 39	-	46,056 39	3,648	-
73	57	Peabody	12 58.7	20,719 19	854 34	21,573 53	1,714	-
70	58	Wakefield	12 58.2	11,500 00	-	11,500 00	914	-
81	59	Randolph	12 56.9	9,000 00	-	9,000 00	716	-
85	60	Sudbury	12 49.9	2,000 00	287 45	2,287 45	183	-
39	61	Revere	12 46.8	5,000 00	-	5,000 00	401	-
100	62	Bridgewater	12 39.8	7,800 00	295 73	8,095 73	653	-
78	63	Weymouth	12 39.7	24,394 49	746 80	25,141 29	2,028	-
25	64	Melrose	12 38.7	11,000 00	-	11,000 00	888	-
61	65	Sterling	12 33.4	2,800 00	-	2,800 00	227	-
60	66	Littleton	12 32.3	2,021 00	-	2,021 00	164	-
105	67	Georgetown	12 30.5	4,800 00	208 27	5,008 27	407	-
65	68	Granby	12 29.9	1,600 00	35 75	1,635 75	133	-
63	69	Greenfield	12 25.4	8,700 00	-	8,700 00	710	-
86	70	Wellesley	12 17.4	4,200 00	-	4,200 00	345	-
77	71	Bedford	12 16.2	1,800 00	-	1,800 00	148	-
59	72	Wrentham	12 14.3	4,500 00	272 20	4,772 20	393	-
138	73	Danvers	12 09.5	12,300 00	291 07	12,591 07	1,041	-
29	74	Falmouth	12 07.3	4,444 25	215 82	4,660 07	386	-
111	75	Sherborn	12 07.1	1,800 00	70 96	1,870 96	155	-
55	76	Upton	12 04.8	4,000 00	-	4,000 00	332	-
								50 00
								104 00

Showing the Comparative Amount of Money appropriated by the different Towns in the State—Continued.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
48	77	Abington	\$12 02.5	\$7,600 00	-	\$7,600 00	632	-
90	78	Orleans	11 97.5	2,400 00	\$30 84	2,430 84	203	-
62	79	Stockbridge	11 96.8	4,500 00	-	4,500 00	376	-
110	80	Medfield	11 94	2,400 00	-	2,400 00	201	-
71	81	Shelburne	11 84.1	3,000 00	137 78	3,137 78	265	-
93	82	Dover	11 68.6	1,100 00	68 60	1,168 60	100	-
41	83	New Braintree	11 60.1	1,345 75	-	1,345 75	116	-
67	84	Sandwich	11 58.8	7,400 00	282 98	7,682 98	663	-
64	85	Dracut	11 57.7	3,000 00	102 60	3,102 60	268	-
84	86	Canton	11 50.4	10,400 00	402 14	10,802 14	939	-
166	87	Orange	11 43	5,200 00	-	5,200 00	455	-
106	88	Ipswich	11 42.3	6,100 00	194 04	6,294 04	551	-
54	89	Worcester	11 40.4	125,305 90	-	125,305 90	10,988	-
107	90	Saugus	11 36.4	5,500 00	-	5,500 00	484	-
153	91	Shirley	11 38.4	2,000 00	216 00	2,216 00	195	-
88	92	Petersham	11 35.6	1,851 00	79 47	1,930 47	170	-
68	93	South Hadley	11 33.8	7,881 89	157 07	8,038 96	709	-
76	94	Taunton	11 28.8	39,102 60	-	39,102 60	3,464	-
69	95	Bradford	11 26.8	4,800 00	-	4,800 00	426	-
154	96	Wayland	11 24.9	4,000 00	139 51	4,139 51	368	-
108	97	Easton	11 24.6	8,767 05	308 75	9,075 80	807	-
82	98	Shrewsbury	11 23.6	3,000 00	-	3,000 00	267	-
176	99	Wilmington	11 23.1	1,550 00	112 20	1,662 20	148	-
103	100	Merrimac	11 17.5	4,200 00	91 11	4,291 11	384	-
97	101	North Reading	11 11.1	1,600 00	-	1,600 00	144	-
53	102	Yarmouth	11 09.8	3,800 00	139 76	3,939 76	355	-

SCHOOL-RETURNS.

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134	Braintree	11 09.7	7,000 00	424 00	7,424 00	669	-
158	Boylston	11 07.6	1,750 00	-	1,750 00	158	-
99	Beverly	10 95.2	15,469 08	813 23	15,782 31	1,441	-
147	Ashby	10 87.5	1,750 00	54 27	1,804 27	166	-
58	Lynn	10 85.6	67,623 58	-	67,623 58	6,229	-
80	Manchester	10 81.1	2,800 00	-	2,800 00	259	-
124	Andover	10 74.7	9,500 00	-	9,500 00	884	-
101	Tyngsborough	10 64.8	1,150 00	-	1,150 00	108	-
66	Stoughton	10 63.1	10,206 18	-	10,206 18	960	-
149	Marshfield	10 61.9	2,500 00	123 08	2,623 08	247	-
114	Leominster	10 61.3	9,350 00	-	9,350 00	881	-
104	Attleborough	10 59.7	19,000 00	773 43	19,773 43	1,866	-
92	Foxborough	10 52.7	5,200 00	284 50	5,484 50	521	\$38 00
49	East Bridgewater	10 48.2	5,000 00	-	5,000 00	477	-
186	Burlington	10 46.8	1,200 00	98 04	1,298 04	124	-
102	Rehoboth	10 45.5	3,000 00	262 01	3,262 01	312	-
119	Brewster	10 42.6	2,200 00	-	2,200 00	211	-
47	Clinton	10 39	17,361 72	-	17,361 72	1,671	-
144	Middleborough	10 35.7	9,000 00	-	9,000 00	869	-
172	Amherst	10 33.2	6,996 17	184 67	7,180 84	695	87 00
129	Brookfield	10 24	4,800 00	166 80	4,966 80	485	-
163	Leicester	10 21.7	5,400 00	260 13	5,660 13	554	-
162	West Springfield	10 21.6	7,241 78	226 23	7,468 01	731	-
185	Townsend	10 21	3,400 00	-	3,400 00	333	-
-	Cottage City	10 20.4	1,000 00	-	1,000 00	98	-
79	Brockton	10 15.6	22,700 00	324 44	23,024 44	2,267	-
181	Harvard	10 15.2	2,000 00	-	2,000 00	197	-
226	Wendell	10 11.2	600 00	26 95	626 95	62	12 00
205	Charlton	10 10.2	1,100 00	51 70	1,151 70	114	-
94	Tewksbury	10 05	2,000 00	-	2,000 00	199	-
128	Tisbury	10 05	2,000 00	-	2,000 00	199	-
178	Charlton	10 03.3	3,000 00	-	3,000 00	299	-

Showing the Comparative Amount of Money appropriated by the different Towns in the State — Continued.

For 1879-80.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
135	Norfolk	\$10 03.2	\$1,200 00	\$84 07	\$1,284 07	128	-
217	Hudson	10 01.4	7,200 00	130 53	7,330 53	732	-
157	Milford	9 98.7	18,702 00	214 04	18,916 04	1,894	-
112	Pittsfield	9 95 6	25,100 00	-	25,100 00	2,521	-
161	Amesbury	9 95.1	5,299 93	123 63	5,423 56	545	-
115	Douglas	9 95.1	4,100 00	-	4,100 00	412	-
113	Chelmsford	9 94.9	4,500 00	236 07	4,736 07	476	-
117	Sharon	9 92.6	2,000 00	144 00	2,144 00	216	-
98	Athol	9 91.7	6,500 00	214 04	6,714 04	677	-
130	Edgartown	9 88.4	1,700 00	-	1,700 00	172	-
144	Salisbury	9 81.8	6,500 00	146 77	6,646 77	677	-
168	Franklin	9 81.3	6,300 00	-	6,300 00	642	-
145	Mattapoisett	9 80.9	1,950 00	60 75	2,010 75	205	-
91	Winthrop	9 80.4	1,500 00	-	1,500 00	153	-
121	Gloucester	9 74.8	38,587 00	484 33	39,071 33	4,008	\$12 00
189	Berkley	9 66.7	1,450 00	-	1,450 00	150	-
155	Bellingham	9 66	1,800 00	277 07	2,077 07	215	-
136	Princeton	9 64	1,600 00	-	1,600 00	166	-
184	Swansey	9 63.8	2,120 41	-	2,120 41	220	-
151	Monson	9 62.4	5,428 47	240 19	5,668 66	589	-
204	Natick	9 61	16,000 00	-	16,000 00	1,665	-
127	Lawrence	9 59.6	65,882 26	-	65,882 26	6,865	-
182	Lee	9 57.8	7,260 00	-	7,260 00	758	-
140	Westborough	9 55.8	8,000 00	-	8,000 00	837	-
192	West Bridgewater	9 55.4	8,000 00	-	8,000 00	814	-
132	Holliston	9 54.9	5,500 00	-	5,500 00	576	134 00

SCHOOL-RETURNS.

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159	Marblehead	9 53-7	13,087 59	330 97	13,418 56	1,407
161	Ashburnham	9 53-3	2,800 00	116 95	2,916 95	306
162	Wenham	9 46-1	1,400 00	66 49	1,466 49	155
163	Wareham	9 46	4,900 00	303 00	5,203 00	550
164	Wareham	9 45-8	20,675 00	-	20,675 00	2,188
165	Chicopee	9 45-3	23,500 00	-	23,500 00	2,486
166	Newburyport	9 44-6	4,033 00	198 93	4,231 93	448
167	Ashland	9 43-3	4,500 00	272 97	4,772 97	506
168	Dartmouth	9 38-3	7,000 00	-	7,000 00	746
169	Medway	9 38-2	19,600 00	-	19,600 00	2,089
170	Northampton	9 34-1	1,600 00	44 00	1,644 00	176
171	Ashfield	9 32-2	2,750 00	-	2,750 00	295
172	Westminster	9 30-8	3,500 00	-	3,500 00	376
173	Sturbridge	9 28-3	2,000 00	404 49	2,404 49	259
174	Northfield	9 28-2	4,000 00	158 52	4,158 52	448
175	Fairhaven	9 27-6	578 00	15 67	593 67	64
176	Alford	9 24-4	7,500 00	255 89	7,755 89	839
177	Gardner	9 23-4	5,000 00	272 88	5,272 88	571
187	Dennis	9 18-6	2,800 00	102 85	2,902 85	316
209	South Scituate	9 17-4	1,025 06	39 15	1,064 21	116
298	Greenwich	9 17	89,526 89	-	89,526 89	9,763
180	Fall River	9 11	2,800 00	169 92	2,969 92	326
181	Raynham	9 10-2	8,000 00	373 94	8,373 94	920
182	Hopkinton	9 09-1	3,500 00	-	3,500 00	385
183	Dalton	9 04-5	1,800 00	-	1,800 00	199
184	Freetown	9 03-6	4,500 00	-	4,500 00	498
185	Mansfield	9 01-9	2,500 00	178 67	2,678 67	297
179	Acton	9 01-3	1,700 00	84 56	1,784 56	198
174	Stow	9 01-1	1,700 00	174 24	1,874 24	208
188	Seekonk	9 00-9	2,000 00	-	2,000 00	222
228	Hubbardston	9 00	7,000 00	191 26	7,191 26	799
193	North Brookfield	8 98	1,200 00	93 24	1,293 24	144
215	North Brookfield					
191	Lunenburg					
192						
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Showing the Comparative Amount of Money appropriated by the different Towns in the State— Continued.

For 1879-80.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the sup- port of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contrib- uted for board and fuel.
170	Dunstable	\$8 95-5	\$600 00	-	\$600 00	67	-
148	Ayer	8 90-6	8,500 00	-	8,500 00	393	-
248	West Brookfield	8 90-2	8,000 00	-	8,000 00	337	-
188	BillERICA	8 88-9	2,800 00	-	2,800 00	815	-
243	Topsfield	8 86-2	1,400 00	\$124 20	1,524 20	172	-
199	West Newbury	8 77-7	2,899 11	94 06	2,993 17	341	-
198	Grafton	8 76-5	7,100 00	-	7,100 00	810	-
191	Northbridge	8 70-6	7,400 00	-	7,400 00	850	-
230	Dighton	8 69-9	2,525 00	128 27	2,653 27	305	-
150	Great Barrington	8 68-3	7,500 00	132 14	7,632 14	879	-
123	Agawam	8 67	3,000 00	-	3,000 00	346	-
241	Conway	8 65-1	2,300 00	79 00	2,379 00	275	\$80 00
219	Hanover	8 63-3	2,750 00	99 00	2,849 00	330	-
311	Peru	8 63	600 00	30 00	630 00	73	-
224	Paxton	8 62-1	1,000 00	-	1,000 00	116	-
283	Maynard	8 58-4	3,500 00	148 41	3,648 41	425	-
143	Templeton	8 56	4,500 00	139 34	4,639 34	542	-
216	New Salem	8 54-2	1,100 00	27 55	1,127 55	132	-
255	Halifax	8 53-7	700 00	-	700 00	82	-
83	Mashpee	8 53-5	500 00	46 25	546 25	64	14 00
333	Hancock	8 51-1	800 00	-	800 00	94	-
229	Rockland	8 49-4	7,500 00	-	7,500 00	883	-
232	Palmer	8 41	9,000 00	218 00	9,218 00	1,096	-
236	Essex	8 30-5	2,400 00	-	2,400 00	289	-
120	Westford	8 28-7	3,000 00	-	3,000 00	362	-
164	Millbury	8 28-2	8,000 00	-	8,000 00	966	-

SCHOOL-RETURNS.

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206	219	Acushnet .	8 24.9	1,600 00	99 21	1,699 21	206
239	220	Sunderland .	8 21.4	1,150 00	-	1,150 00	140
214	221	Blackstone .	8 20.2	7,500 00	857 31	7,557 31	958
137	222	Provincetown	8 15.7	6,754 30	-	6,754 30	820
265	223	Enfield .	8 13.9	1,400 00	-	1,400 00	172
281	224	Bolton .	8 10.8	1,200 00	-	1,200 00	148
152	225	Royalston .	8 09.8	1,500 00	70 99	1,570 99	194
320	226	Rowley .	8 09.2	1,400 00	-	1,400 00	178
197	227	Oxford .	8 08.1	4,000 00	-	4,000 00	495
220	228	Hawley .	8 06.5	1,000 00	-	1,000 00	124
175	229	Southbridge	8 06.4	10,314 00	-	10,314 00	1,279
231	230	Warwick .	7 98.3	950 00	-	950 00	119
177	231	Truro .	7 95.1	1,400 00	31 25	1,431 25	180
221	232	Lenox .	7 93.3	3,300 00	-	3,300 00	416
259	233	Westport .	7 93.3	4,000 00	244 00	4,244 00	535
276	234	Erving .	7 90.6	1,200 00	25 50	1,225 50	155
227	235	Easthampton	7 88.5	6,600 00	110 50	6,710 50	851
278	236	Rochester .	7 87.2	1,515 65	113 99	1,629 64	207
223	237	Holyoke .	7 83.6	33,000 00	436 05	33,436 05	4,267
210	238	Deerfield .	7 82.6	4,500 00	121 50	4,621 50	590
201	239	South Abington	7 81.1	4,000 00	171 40	4,171 40	533
141	240	Boxford .	7 72.8	1,000 00	54 48	1,054 48	135
240	241	Belchertown	7 70.5	3,500 00	131 93	3,631 93	470
269	242	Nantucket .	7 62.9	4,314 55	63 04	4,314 55	560
247	243	Middleton .	7 59.8	1,150 00	136 41	1,213 04	159
207	244	Scituate .	7 53.9	3,850 00	66 99	3,986 41	525
203	245	Hamilton .	7 53.9	800 00	66 61	866 99	115
285	246	Marion .	7 50.8	1,200 00	66 61	1,266 61	168
256	247	North Adams	7 45.3	16,092 98	184 99	16,277 97	2,168
301	248	Wilbraham	7 44.8	1,839 82	112 86	1,952 68	262
244	249	Carver .	7 42.1	1,200 00	95 91	1,295 91	174
	250	Monterey .		800 00	90 55	890 55	120

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BOARD OF EDUCATION.

Showing the Comparative Amount of Money appropriated by the different Towns in the State — Continued.

		TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the sup- port of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contrib- uted for board and fuel.
For 1879-80.	For 1880-81.							
246	251	Plympton	\$7 41.7	\$800 00	\$85 26	\$385 26	118	-
244	252	Duxbury	7 37.5	2,500 00	228 59	2,728 59	370	-
258	253	Norton	7 36.3	2,000 00	201 72	2,201 72	299	\$27 00
252	254	Marlborough	7 35.5	15,600 00	-	15,600 00	2,121	-
282	255	Chatham	7 35	8,000 00	65 00	8,065 00	417	-
237	256	Adams	7 34.2	8,538 50	-	8,538 50	1,163	-
264	257	Phillipston	7 33.6	800 00	73 11	873 11	119	-
304	258	Hadley	7 27.5	2,750 00	-	2,750 00	378	-
238	259	Dudley	7 21.6	4,200 00	151 52	4,351 52	603	-
297	260	Mendon	7 18.8	1,300 00	107 94	1,407 94	196	-
242	261	Leverett	7 16.8	800 00	53 00	853 00	119	-
262	262	Rowe	7 14.7	650 00	86 15	686 15	96	-
263	263	Huntington	7 12.9	1,300 00	61 69	1,361 69	191	-
254	264	Winchendon	7 07.4	4,824 63	-	4,824 63	682	-
809	265	Blandford	7 03.6	1,440 62	64 98	1,505 60	214	636 70
233	266	Ware	7 03.5	7,000 00	-	7,000 00	995	-
196	267	Montague	6 98.7	8,000 00	-	8,000 00	1,145	-
211	268	Rutland	6 98.7	1,600 00	-	1,600 00	229	-
268	269	Webster	6 95.5	6,300 00	259 60	6,559 60	939	-
235	270	Warren	6 96.9	6,000 00	-	6,000 00	861	-
257	271	Worthington	6 96.7	700 00	198 80	898 80	129	495 00
200	272	Cheshire	6 96.4	2,500 00	-	2,500 00	359	-
249	273	Groveland	6 94.4	3,000 00	-	3,000 00	432	-
815	274	West Stockbridge	6 93.8	3,000 00	59 93	3,059 93	441	-
277	275	Spencer	6 93.7	10,350 00	-	10,350 00	1,492	-
116	276	Plainfield	6 89.7	400 00	-	400 00	58	-

SCHOOL-RETURNS.

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279	Colrain	6 88-7	2,000 00	66 00	2,066 00	300	85 00
267	Hanson	6 82-9	1,600 00	80 05	1,680 05	246	-
278	Chesterfield	6 80-7	900 00	19 00	919 00	135	137 12
245	Heath	6 79-6	700 00	-	700 00	103	-
286	Dana	6 76-1	700 00	30 20	730 20	108	-
282	Williamstown	6 72-6	4,500 00	-	4,500 00	689	-
293	Hampden	6 70-7	1,100 00	80 88	1,180 88	176	-
287	Granville	6 66-6	1,600 00	66 43	1,666 43	250	63 00
312	Southampton	6 59-4	1,250 00	68 80	1,318 80	200	-
290	Brimfield	6 57-7	1,400 00	-	1,400 00	213	-
253	Montgomery	6 53 8	425 00	-	425 00	65	-
213	Somerset	6 48-6	2,523 18	-	2,523 18	389	-
272	Lakeville	6 46-2	1,421 77	-	1,421 77	220	-
266	Pepperell	6 45-2	2,400 00	-	2,400 00	372	-
290	Williamsburg	6 42-9	2,500 00	97 45	2,597 45	404	35 00
314	Eastham	6 42-8	900 00	-	900 00	140	-
271	Ludlow	6 41-7	2,000 00	117 48	2,117 48	330	-
292	Whately	6 39-8	1,350 00	-	1,350 00	211	-
310	Harwich	6 36-5	4,000 00	111 67	4,111 67	646	-
299	Westampton	6 27-1	800 00	21 49	821 49	131	-
306	Rockport	6 26	4,958 00	-	4,958 00	792	-
308	Becket	6 25-3	1,303 50	63 30	1,366 80	217	-
300	Oakham	6 24-7	750 00	92 72	842 72	135	16 00
305	Newbury	6 23-2	1,700 00	40 00	1,740 00	279	-
225	Chilmark	6 23-1	450 00	17 32	467 32	75	-
294	Holden	6 20-8	2,818 57	194 44	3,013 01	485	-
302	Gill	6 20-1	800 00	-	800 00	129	132 00
284	Shutesbury	6 13-5	600 00	25 81	625 81	102	-
274	Sheffield	6 06-6	2,500 00	272 33	2,772 33	457	-
289	Middlefield	6 01-1	800 00	131 70	931 70	155	-
292	Sandisfield	5 98-1	1,200 00	32 27	1,232 27	206	149 00
313	Prescott	5 97-2	500 00	25 56	525 56	88	-
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BOARD OF EDUCATION.

Showing the Comparative Amount of Money appropriated by the different Towns in the State — Concluded.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
317	309	Hinsdale	\$5 88.2	\$2,500 00	-	\$2,500 00	425	-
261	310	Tolland	5 74.7	500 00	-	500 00	87	\$97 00
322	311	Sutton	5 74	4,150 00	-	4,150 00	723	-
319	312	Pelham	5 72.9	650 00	\$48 94	698 94	122	-
296	313	Berlin	5 69.1	1,000 00	86 59	1,086 59	191	-
273	314	Pembroke	5 59.7	1,500 00	-	1,500 00	268	-
291	315	Lynnfield	5 55.6	600 00	-	600 00	108	-
330	316	Auburn	5 51.9	1,150 00	113 91	1,263 91	229	-
323	317	Otis	5 46.8	1,000 00	49 95	1,049 95	192	-
332	318	Chester	5 40.9	1,400 00	87 60	1,487 60	275	-
286	319	Washington	5 38.1	650 00	38 72	688 72	128	-
307	320	West Boylston	5 37.5	3,300 00	-	3,300 00	614	-
318	321	Hardwick	5 30.4	2,300 00	108 08	2,408 08	454	-
321	322	New Marlborough	5 22.1	2,000 00	62 38	2,062 38	395	-
323	323	Leyden	5 21.7	600 00	-	600 00	115.	-
327	324	Tyringham	5 19.2	600 00	23 00	623 00	120	54 00
335	325	Hatfield	5 14.7	1,500 00	69 89	1,569 89	305	-
331	326	Cummington	5 02.7	900 00	30 00	930 00	185	400 00
295	327	Mount Washington	4 83.9	150 00	-	150 00	31	-
344	328	Barnardston	4 82.8	683 00	79 80	762 80	158	50 00
328	329	Buckland	4 79	1,000 00	86 10	1,086 10	352	-
325	330	Southwick	4 72.9	900 00	78 99	978 99	207	-
326	331	Florida	4 64.5	538 88	-	538 88	116	15 25
337	332	Wales	4 52.9	800 00	51 50	851 50	188	-
338	333	Clarksburg	4 43	700 00	-	700 00	153	-
324	334	Lanesborough	4 36.4	1,200 00	-	1,200 00	275	50 00

SCHOOL-RETURNS.

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303	335	Gosnold	.	.	.	4 26.1	80 00	18 00	98 00	23	-
339	336	Windsor	.	.	.	4 25.7	400 00	30 00	430 00	101	-
275	337	Egremont	.	.	.	4 16.3	1,000 00	36 57	1,036 57	249	-
334	338	Goshen	.	.	.	4 05.4	300 00	-	300 00	74	110 00
336	339	Richmond	.	.	.	3 93.4	1,000 00	54 86	1,054 36	268	-
190.	340	Russell	.	.	.	3 85.7	500 00	39 95	539 95	140	-
341	341	Monroe	.	.	.	3 84.6	200 00	-	200 00	52	-
329	342	Savoy	.	.	.	3 48.9	500 00	33 81	533 81	153	185 00
340	343	New Ashford	.	.	.	3 46.1	102 00	15 67	117 67	34	-
343	344	Holland	.	.	.	3 42.6	200 00	15 88	215 88	63	-
342	345	Gay Head	.	.	.	2 57.1	90 00	-	90 00	35	-

GRADUATED TABLES — (COUNTY TABLES) — FIRST SERIES.

Table showing the Comparative Amount of Money appropriated by the different Towns in each of the Counties in the State for the Education of each Child in the Town, between the Ages of 5 and 15 Years.

BARNSTABLE COUNTY.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
2	1	BARNSTABLE	\$14 01-8	\$9,000 00	\$335 96	\$9,335 96	666	-
6	2	Wellfleet	12 17-4	4,200 00	-	4,200 00	345	-
1	3	Falmouth	12 07-3	4,444 25	215 82	4,660 07	386	-
7	4	Orleans	11 97-5	2,400 00	30 84	2,430 84	203	-
4	5	Sandwich	11 58-8	7,400 00	282 98	7,682 98	663	-
3	6	Yarmouth	11 09-8	3,800 00	139 76	3,939 76	355	-
8	7	Brewster	10 42-6	2,200 00	-	2,200 00	211	-
11	8	Dennis	9 23-4	5,000 00	272 88	5,272 88	571	\$50 00
5	9	Mashpee	8 53-5	500 00	46 25	546 25	64	14 00
9	10	Provincetown	8 15-7	6,754 30	-	6,754 30	828	-
10	11	Truro	7 95-1	1,400 00	31 25	1,431 25	180	-
13	12	Chatham	7 35	3,000 00	65 00	3,065 00	417	-
12	13	Eastham	6 42-8	900 00	-	900 00	140	-
14	14	Harwich	6 36-5	4,000 00	111 67	4,111 67	646	-

BERKSHIRE COUNTY.

1	1	STOCKBRIDGE	\$11 90-8	\$4,500 00	-	\$4,500 00	876	-
2	2	Pittsfield	9 95-6	25,100 00	-	25,100 00	2,521	-

SCHOOL-RETURNS.

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4	3	Lee	9 57-8	7,260 00	-	7,260 00	758
8	4	Alford	9 27-6	578 00	\$15 67	593 67	64
5	5	Dalton	9 09-1	3,500 00	-	3,500 00	385
8	6	Great Barrington	8 68-3	7,500 00	132 14	7,32 14	879
18	7	Peru	8 63	600 00	30 00	630 00	73
28	8	Hancock	8 51-1	800 00	-	800 00	94
7	9	Lenox	7 93-3	3,300 00	-	3,300 00	416
12	10	North Adams	7 50-8	16,092 98	184 99	16,277 97	2,168
10	11	Monterey	7 42-1	800 00	90 55	890 55	120
9	12	Adams	7 34-2	8,538 50	-	8,538 50	1,163
6	13	Cheshire	6 96-4	2,500 00	-	2,500 00	359
20	14	West Stockbridge	6 93-8	3,000 00	59 93	3,059 93	441
15	15	Williamstown	6 72-6	4,500 00	-	4,500 00	669
17	16	Becket	6 25-3	1,303 50	63 30	1,366 80	217
14	17	Sheffield	6 06-6	2,500 00	272 33	2,772 33	457
19	18	Sandisfield	5 98-1	1,200 00	32 27	1,232 27	206
21	19	Hinsdale	5 88-2	2,500 00	-	2,500 00	425
23	20	Otis	5 46-8	1,000 00	49 95	1,049 95	192
13	21	Washington	5 92-1	650 00	38 72	688 72	128
22	22	New Marlborough	5 22-1	2,000 00	62 38	2,062 38	395
26	23	Tyringham	5 19-2	600 00	23 00	623 00	120
16	24	Mount Washington	4 83-9	150 00	-	150 00	31
25	25	Florida	4 64-5	538 88	-	538 88	116
30	26	Clarksburg	4 43	700 00	-	700 00	158
24	27	Lanesborough	4 36-4	1,200 00	-	1,200 00	275
31	28	Windsor	4 25-7	400 00	30 00	430 00	101
11	29	Egremont	4 16-3	1,000 00	36 57	1,036 57	249
29	30	Richmond	3 93-4	1,000 00	54 36	1,054 36	268
27	31	Savoy	3 48-9	500 00	33 81	533 81	153
32	32	New Ashford	3 46-1	102 00	15 67	117 67	34
							\$149 00
							54 00
							15 25
							50 00
							185 00
							-

BOARD OF EDUCATION.

BRISTOL COUNTY.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age	Amount contributed for board and fuel.
1	1	NEW BEDFORD.	\$17 71-1	\$71,640 00	\$673 66	\$72,313 66	4,083	-
2	2	Taunton	11 28-8	39,102 60	-	39,102 60	3,464	-
3	3	Easton	11 24-6	8,767 05	308 75	9,075 80	807	-
4	4	Attleborough	10 59-7	19,000 00	773 43	19,773 43	1,866	-
5	5	Rehoboth	10 45-5	3,000 00	262 01	3,262 01	312	-
6	6	Berkley	9 68-7	1,450 00	-	1,450 00	150	-
7	7	Swansey	9 63-8	2,120 41	-	2,120 41	220	-
8	8	Dartmouth	9 43-3	4,500 00	272 97	4,772 97	506	-
9	9	Fairhaven	9 28-2	4,000 00	158 52	4,158 52	448	-
10	10	Fall River	9 17	89,526 89	-	89,526 89	9,763	-
11	11	Raynham	9 11	2,800 00	169 92	2,969 92	326	-
12	12	Freetown	9 04-5	1,800 00	-	1,800 00	199	-
13	13	Mansfield	9 03-6	4,500 00	-	4,500 00	498	-
14	14	Seekonk	9 01-1	1,700 00	174 24	1,874 24	208	-
15	15	Dighton	8 69-9	2,525 00	128 27	2,653 27	305	-
16	16	Acushnet	8 24-9	1,600 00	99 21	1,699 21	206	-
17	17	Westport	7 93-3	4,000 00	244 00	4,244 00	535	-
18	18	Norton	7 38-3	2,000 00	201 72	2,201 72	299	-
19	19	Somerset	6 48 6	2,523 18	-	2,523 18	889	\$27 00

DUKES COUNTY.

6	1	COTTAGE CITY	\$10 20-4	\$1,000 00	-	\$1,000 00	98	-
1	2	Tisbury	10 05	2,000 00	-	2,000 00	199	-

SCHOOL-RETURNS.

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ESSEX COUNTY.									
2	3	Edgartown .	9 88 4	1,700 00	-	1,700 00	172	-	-
3	4	Chilmark .	6 23 1	450 00	\$17 32	467 32	75	-	-
4	5	Gosnold .	4 26 1	80 00	18 00	98 00	23	-	-
5	6	Gay Head .	2 57 1	90 00	-	90 00	33	-	-
1	1	MAHANT .	\$42 16 1	\$4,679 85	-	\$4,679 85	111	-	-
2	2	Swampscott .	19 00 6	6,500 00	-	6,500 00	812	-	-
4	3	Salem .	14 53 2	69,400 84	\$1,252 15	70,652 99	4,802	-	-
5	4	North Andover .	13 60 5	8,000 00	-	8,000 00	588	-	-
10	5	Methuen .	13 04 3	8,700 00	-	8,700 00	667	-	-
3	6	Haverhill .	12 85 7	45,000 00	-	45,000 00	3,500	-	-
8	7	Peabody .	12 58 7	20,719 19	854 34	21,573 53	1,714	-	-
18	8	Georgetown .	12 30 5	4,800 00	208 27	5,008 27	407	-	-
13	9	Danvers .	12 09 5	12,300 00	291 07	12,591 07	1,041	-	-
14	10	Ipswich .	11 42 3	6,100 00	194 04	6,294 04	551	-	-
15	11	Saugus .	11 36 4	5,500 00	-	5,500 00	484	-	-
7	12	Bradford .	11 26 8	4,800 00	-	4,800 00	426	-	-
12	13	Merrimac .	11 17 5	4,200 00	91 11	4,291 11	384	-	-
11	14	Beverly .	10 95 2	15,469 08	813 23	15,782 31	1,441	-	-
6	15	Lynn .	10 85 6	67,623 58	-	67,623 58	0,229	-	-
9	16	Manchester .	10 81 1	2,800 00	-	2,800 00	259	-	-
16	17	Andover .	10 74 7	9,500 00	-	9,500 00	884	-	-
22	18	Amesbury .	9 95 1	5,299 93	123 63	5,423 56	545	-	-
23	19	Salisbury .	9 81 8	6,500 00	146 77	6,646 77	677	-	-
24	20	Gloucester .	9 74 8	38,587 00	484 33	39,071 33	4,008	\$12 00	-
19	21	Lawrence .	9 59 6	65,882 26	-	65,882 26	6,865	-	-
21	22	Marblehead .	9 53 7	13,087 59	330 97	13,418 56	1,407	-	-
26	23	Wenham .	9 46 1	1,400 00	66 49	1,466 49	155	-	-
17	24	Newburyport	9 45 3	23,500 00	-	23,500 00	2,486	-	-

ESSEX COUNTY — CONCLUDED.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
29	25	Topsfield	\$8 86.2	\$1,400 00	\$124 20	\$1,524 20	172	-
25	26	West Newbury	8 77.7	2,899 11	94 06	2,993 17	341	-
28	27	Essex	8 30.5	2,400 00	-	2,400 00	289	-
35	28	Rowley	8 09.2	1,400 00	-	1,400 00	173	-
20	29	Boxford	7 81.1	1,000 00	54 48	1,054 48	135	-
31	30	Middleton	7 62.9	1,150 00	63 04	1,213 04	169	-
27	31	Hamilton	7 53.9	800 00	66 99	866 99	115	-
30	32	Groveland	6 94.4	3,000 00	-	3,000 00	432	-
33	33	Rockport	6 26	4,958 00	-	4,958 00	792	-
32	34	Newbury	6 23.7	1,700 00	40 00	1,740 00	279	-
	35	Lynnfield	5 55.6	600 00	-	600 00	108	-

FRANKLIN COUNTY.

1	1	GREENFIELD	\$12 25.4	\$8,700 00	-	\$8,700 00	710	-
2	2	Shelburne	11 84.1	3,000 00	\$137 78	3,137 78	265	-
3	3	Orange	11 43	5,200 00	-	5,200 00	453	-
11	4	Wendell	10 11.2	600 00	26 95	626 95	62	\$12 00
6	5	Charlemont	10 10.2	1,100 00	51 70	1,151 70	114	-
4	6	Ashfield	9 34.1	1,600 00	44 00	1,644 00	176	169 50
7	7	Northfield	9 28.3	2,000 00	404 49	2,404 49	259	-
14	8	Conway	8 65.1	2,300 00	79 00	2,379 00	275	80 00
9	9	New Salem	8 54.2	1,100 00	27 55	1,127 55	132	-
13	10	Sunderland	8 21.4	1,150 00	-	1,150 00	140	-

SCHOOL-RETURNS.

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10	11	Hawley	8 06 5	1,000 00	-	1,000 00	124	-
12	12	Warwick	7 98-3	950 00	-	950 00	119	-
19	13	Erving	7 90-6	1,200 00	25 50	1,225 50	155	-
8	14	Deerfield	7 83-3	4,500 00	121 50	4,621 50	590	-
15	15	Leverett	7 16-8	800 00	53 00	853 00	119	-
17	16	Rowe .	7 14-7	650 00	36 15	686 15	96	-
5	17	Montague	6 98-7	8,000 00	-	8,000 00	1,145	-
20	18	Colrain	6 88-7	2,000 00	66 00	2,066 00	300	85 00
16	19	Heath .	6 79-6	700 00	-	700 00	103	-
23	20	Whately	6 39-8	1,350 00	-	1,350 00	211	-
21	21	Gill .	6 20-1	800 00	-	800 00	129	132 00
18	22	Shutesbury.	6 13-5	600 00	25 81	625 81	102	-
22	23	Leyden	5 21-7	600 00	-	600 00	115	-
26	24	Barnardston	4 82-8	683 00	79 80	762 80	158	50 00
24	25	Buckland	4 79	1,600 00	86 10	1,686 10	852	-
25	26	Monroe	3 84-6	200 00	-	200 00	52	-

HAMPDEN COUNTY.

1	1	SPRINGFIELD	\$13 98-1	\$82,000 00	\$442 82	\$82,000 00	5,865	-
2	2	Westfield .	13 27	17,259 68	163 09	17,702 50	1,334	-
3	3	Longmeadow	12 91-7	2,950 00	236 23	3,113 09	241	-
6	4	West Springfield	10 21-6	7,241 78	240 19	7,468 01	731	-
8	5	Monson	9 62-4	5,428 47	-	5,668 66	589	-
4	6	Chicopee	9 45-8	20,675 00	-	20,675 00	2,186	-
5	7	Agawam	8 67	3,000 00	-	3,000 00	346	-
10	8	Palmer	8 41	9,000 00	218 00	9,218 00	1,096	-
11	9	Holyoke .	7 83-6	83,000 00	436 05	83,436 05	4,267	-
13	10	Wilbraham	7 45-3	1,839 82	112 86	1,952 68	262	-
17	11	Blandford	7 03-6	1,440 62	64 98	1,505 60	214	\$636 70
18	12	Hampden .	6 70-7	1,100 00	80 38	1,180 38	176	-

BOARD OF EDUCATION.

HAMPDEN COUNTY—CONCLUDED.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
18	13	Granville	\$6 66-6	\$1,600 00	\$66 43	\$1,666 43	250	\$63 00
12	14	Brimfield	6 57-3	1,400 00	-	1,400 00	213	-
9	15	Montgomery	6 53-8	425 00	-	425 00	65	-
15	16	Ludlow	6 41-7	2,000 00	117 48	2,117 48	330	-
14	17	Tolland	5 74-7	500 00	-	500 00	87	97 00
20	18	Chester	5 40-9	1,400 00	87 60	1,487 60	275	-
19	19	Southwick	4 72 9	900 00	78 99	978 99	207	-
21	20	Wales	4 52-9	800 00	51 50	851 50	188	-
7	21	Russell	3 85-7	500 00	39 95	539 95	140	-
22	22	Holland	3 42-6	200 00	15 88	215 88	63	-

HAMPSHIRE COUNTY.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	GRANDY.	\$12 29-9	\$1,600 00	\$35 75	\$1,635 75	133	-
2	2	South Hadley	11 33-8	7,881 89	157 07	8,038 96	709	-
5	3	Amherst	10 33-2	6,996 17	184 67	7,180 84	695	-
4	4	Northampton	9 38-2	19,600 00	-	19,600 00	2,089	-
16	5	Greenwich	9 17-4	1,025 06	39 15	1,064 21	116	-
13	6	Enfield	8 13-9	1,400 00	-	1,400 00	172	-
7	7	Easthampton	7 88-5	6,600 00	110 50	6,710 50	851	-
9	8	Belchertown	7 72 8	3,500 00	131 93	3,631 93	470	-
17	9	Hadley	7 27-5	2,750 00	-	2,750 00	378	-
12	10	Huntington	7 12-9	1,300 00	61 69	1,361 69	191	-

SCHOOL-RETURNS.

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8	Ware .	7 03-5	7,000 00	-	7,000 00	995	-
10	Worthington	6 96-7	700 00	198 80	898 80	129	\$495 00
3	Plainfield .	6 89-7	400 00	-	400 00	58	-
6	Chesterfield	6 80-7	900 00	19 00	919 00	135	137 12
14	Southampton	6 59-4	1,250 00	68 80	1,318 80	200	-
19	Williamsburg	6 42-9	2,500 00	97 45	2,597 45	404	35 00
18	Westhampton	6 27-1	800 00	21 49	821 49	131	-
15	Middlefield.	6 01-1	800 00	131 70	931 70	155	-
11	Prescott .	5 97-2	500 00	25 56	525 56	88	-
20	Pelham .	5 72-9	630 00	48 94	698 94	122	-
23	Hatfield .	5 14-7	1,500 00	69 89	1,569 89	305	-
21	Cummington	5 02-7	900 00	30 00	930 00	185	400 00
22	Goshen .	4 05-4	300 00	-	300 00	74	110 00

MIDDLESEX COUNTY.

1	NEWTON.	\$21 98-7	\$69,249 59	\$712 50	\$69,962 09	3,182	-
4	Winchester.	21 31-4	12,000 00	-	12,000 00	563	-
2	Arlington .	20 88-5	17,000 00	-	17,000 00	814	-
3	Lexington .	20 00	8,400 00	-	8,400 00	420	-
5	Medford .	19 40-8	23,367 00	-	23,367 00	1,204	-
6	Weston .	18 98-4	3,550 00	-	3,550 00	187	-
11	Belmont .	18 45-2	4,630 00	-	4,650 00	252	-
7	Watertown.	17 56-7	15,020 00	-	15,020 00	855	-
6	Waltham .	16 11-9	31,363 28	228 28	34,591 56	2,146	-
12	Reading .	16 06-4	8,000 00	-	8,000 00	498	-
10	Malden .	15 37	32,000 00	-	32,000 00	2,082	-
15	Frammingham	15 03-7	14,800 00	317 49	15,117 49	1,004	-
16	Cambridge .	14 98-2	140,686 60	-	140,686 60	9,390	-
9	Carlisle .	14 58	700 00	72 75	772 75	53	-
24	Groton .	14 50-6	4,700 00	-	4,700 00	324	-
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BOARD OF EDUCATION.

MIDDLESEX COUNTY — CONCLUDED.

		TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the sup- port of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contrib- uted for board and fuel.
For 1879-80.	For 1880-81.							
35	16	Woburn	\$13 45-9	\$30,000 00	-	\$30,000 00	2,229	-
28	17	Lincoln	13 42-3	2,000 00	-	2,000 00	149	-
10	18	Somerville	13 30-3	67,233 00	-	67,233 00	5,054	-
19	19	Stoneham	13 24-7	11,750 00	-	11,750 00	887	-
25	20	Boxborough	13 10	655 01	-	655 01	50	-
20	21	Lowell	13 09-4	119,430 00	-	119,430 00	9,121	-
18	22	Everett	12 95-8	9,899 88	-	9,899 88	764	\$104 00
18	23	Concord	12 92-7	8,221 50	-	8,221 50	636	-
23	24	Wakefield	12 58-2	11,500 00	-	11,500 00	914	-
27	25	Sudbury	12 49-9	2,000 00	\$287 45	2,287 45	183	-
24	26	Melrose	12 38-7	11,000 00	-	11,000 00	888	50 00
21	27	Littleton	12 32-3	2,021 00	-	2,021 00	164	-
26	28	Bedford	12 16-2	1,800 00	-	1,800 00	148	-
32	29	Sherborn	12 07-1	1,800 00	70 98	1,870 98	153	-
22	30	Dracut	11 57-7	3,000 00	102 60	3,102 60	263	-
41	31	Shirley	11 36-4	2,000 00	216 00	2,216 00	195	-
42	32	Wayland	11 24-9	4,000 00	139 51	4,139 51	363	-
47	33	Wilmington	11 23-1	1,550 00	112 20	1,662 20	148	-
30	34	North Reading	11 11-1	1,600 00	-	1,600 00	144	-
39	35	Ashby	10 87-5	1,750 00	54 27	1,804 27	166	-
31	36	Tyngsborough	10 64-8	1,150 00	-	1,150 00	108	-
49	37	Burlington	10 46-8	1,200 00	98 04	1,298 04	124	-
48	38	Townsend	10 21	3,400 00	-	3,400 00	333	-
29	39	Tewksbury	10 05	2,000 00	-	2,000 00	199	-
51	40	Hudson	10 01-4	7,200 00	130 53	7,330 53	732	-
83	41	Chelmsford	9 94-9	4,500 00	236 07	4,736 07	476	-

36	42	Natick	.	.	.	9 61	16,000 00	-	16,000 00	1,665	-
37	43	Holliston	.	.	.	9 54-9	5,500 00	-	5,500 00	578	134 00
38	44	Ashland	.	.	.	9 44 6	4,033 00	198 93	4,231 93	448	-
43	45	Hopkinton	.	.	.	9 10-2	8,000 00	373 94	8,373 94	920	82 56
46	46	Acton	.	.	.	9 01-9	2,500 00	178 67	2,678 67	297	-
45	47	Stow	.	.	.	9 01-3	1,700 00	84 56	1,784 56	198	-
44	48	Dunstable	.	.	.	8 95 5	600 00	-	600 00	67	-
49	49	Ayer	.	.	.	8 90-6	3,500 00	-	3,500 00	393	-
50	50	BillERICA	.	.	.	8 88-9	2,800 00	-	2,800 00	315	-
54	51	Maynard	.	.	.	8 58-4	3,500 00	148 41	3,648 41	425	-
34	52	Westford	.	.	.	8 28-7	3,000 00	-	3,000 00	362	-
53	53	Marlborough	.	.	.	7 35-5	15,800 00	-	15,800 00	2,121	-
52	54	Pepperell	.	.	.	6 45-2	2,400 00	-	2,400 00	372	-

NANTUCKET COUNTY.

		NANTUCKET	.	.	.	\$7 70-5	\$4,314 55	-	\$4,314 55	560	-
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NORFOLK COUNTY.

1	1	BROOKLINE	.	.	.	\$27 62 8	\$36,000 00	-	\$36,000 00	1,303	-
2	2	Milton	.	.	.	24 30-5	13,391 95	-	13,391 95	551	-
3	3	Dedham	.	.	.	19 84-7	21,435 00	-	21,435 00	1,080	-
5	4	Needham	.	.	.	17 38 4	15,000 00	\$384 75	15,384 75	885	\$150 00
7	5	Walpole	.	.	.	14 36-2	5,300 00	-	5,300 00	369	110 00
9	6	Cohasset	.	.	.	13 87-8	5,500 00	217 64	5,717 64	412	-
8	7	Hyde Park	.	.	.	13 56-2	19,000 00	-	19,000 00	1,401	-

BOARD OF EDUCATION.

NORFOLK COUNTY — CONCLUDED.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs. of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
12	8	Holbrook	\$13 41-8	\$4,700 00	\$144 00	\$4,844 00	361	-
4	9	Quincy	13 39-8	26,100 00	-	26,100 00	1,948	-
6	10	Norwood	13 37-9	5,900 00	-	5,900 00	441	-
14	11	Randolph	12 56-9	9,000 00	-	9,000 00	716	-
13	12	Weymouth.	12 30-7	24,391 49	746 80	25,141 29	2,028	-
10	13	Wrentham.	12 14-3	4,500 00	272 20	4,772 20	393	-
18	14	Medfield	11 94	2,400 00	-	2,400 00	201	-
17	15	Dover.	11 68-6	1,100 00	68 60	1,168 60	100	-
15	16	Canton	11 50-4	10,400 00	402 14	10,802 14	939	-
20	17	Braintree	11 09-7	7,000 00	424 00	7,424 00	669	-
11	18	Stoughton.	10 63-1	10,206 18	-	10,206 18	960	\$38 00
16	19	Foxborough	10 52-7	5,200 00	284 50	5,484 50	521	-
21	20	Norfolk	10 63-2	1,200 00	84 07	1,284 07	128	-
19	21	Sharon	9 92-6	2,000 00	144 00	2,144 00	216	-
23	22	Franklin	9 51-3	6,300 00	-	6,300 00	642	-
22	23	Bellingham	9 66	1,800 00	277 07	2,077 07	215	-
24	24	Medway	9 38-3	7,000 00	-	7,000 00	746	-

PLYMOUTH COUNTY.

1	1	KINGSTON	\$15 47-8	\$3,250 00	\$108 70	\$3,358 70	217	-
12	2	Hull.	15 09-4	800 00	-	800 00	53	-
2	3	Hingham	14 33-4	9,976 41	-	9,976 41	606	-

SCHOOL-RETURNS.

CV

3	Plymouth	13 06.4	10,384 00	234 00	16,618 00	1,272
8	Bridgewater	12 39 8	7,800 00	295 73	8,095 73	653
4	Abington	12 02.5	7,600 00	-	7,600 00	632
10	Marshfield	10 61 9	2,500 00	123 08	2,623 08	247
5	East Bridgewater	10 48.2	5,000 00	-	5,000 00	477
9	Middleborough	10 35.7	10,357 00	-	10,357 00	860
6	Brookton	10 15.6	22,700 00	824 44	23,024 44	2,267
7	Mattapoisett	9 80 9	1,950 00	60 75	2,010 75	205
13	West Bridgewater	9 55.4	3,000 00	-	3,000 00	314
11	Wareham	9 46.0	4,900 00	303 00	5,203 00	550
16	South Scituate	9 18 6	2,800 00	102 85	2,902 85	316
17	Hanover	8 63 3	2,750 00	99 00	2,849 00	330
12	Halifax	8 53 7	700 00	-	700 00	82
18	Rockland	8 49.4	7,500 00	-	7,500 00	883
26	Rochester	7 87.2	1,515 65	113 99	1,629 64	207
14	South Abington	7 82 6	4,000 00	171 40	4,171 40	533
21	Scituate	7 59 3	3,850 00	136 41	3,986 41	525
15	Marion	7 53.9	1,200 00	66 61	1,266 61	168
27	Carver	7 41 8	1,200 00	95 91	1,295 91	174
20	Plympton	7 41.7	800 00	85 26	885 26	118
19	Duxbury	7 37.5	2,500 00	228 59	2,728 59	370
24	Hanson	6 82 9	1,600 00	80 05	1,680 05	246
23	Lakeville	6 46.2	1,421 77	-	1,421 77	220
25	Pembroke	5 59.7	1,500 00	-	1,500 00	268

SUFFOLK COUNTY.

1	1	BOSTON .	•	•	•	\$25 18-2	\$1,300,000 41	\$152,971 91	\$1,453,062 32	57,703	-
3	2	Chelsea	•	•	•	12 62-5	46,056 39	-	46,056 39	8,648	-
2	3	Ravere	•	•	•	12 46-8	5,000 00	-	5,000 00	401	-
4	4	Winthrop	•	•	•	9 80-4	1,500 00	-	1,500 00	153	-

BOARD OF EDUCATION.

WORCESTER COUNTY.

For 1879-80.	For 1880-81.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 yrs of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
1	1	LANCASTER	\$16 60-7	\$4,633 36	-	\$4,633 36	279	-
5	2	Barre	13 85-1	4,600 00	\$178 61	4,778 61	345	-
9	3	Uxbridge	13 41 3	6,000 00	196 95	6,196 95	462	-
13	4	Southborough	13 17 4	4,500 00	84 50	4,584 50	348	-
3	5	Fitchburg	13 06 3	30,500 00	119 72	30,619 72	2,344	-
2	6	Northborough	12 85-1	3,200 00	-	3,200 00	249	-
10	7	Sterling	12 33-4	2,800 00	-	2,800 00	227	-
8	8	Upton	12 04-8	4,000 00	-	4,000 00	332	-
4	9	New Braintree	11 60-1	1,345 75	-	1,345 75	116	-
7	10	Worcester	11 40-4	125,305 90	-	125,305 90	10,988	-
12	11	Petersham	11 35-6	1,851 00	70 47	1,930 47	170	-
11	12	Shrewsbury	11 23 6	3,000 00	-	3,000 00	267	-
26	13	Boylston	11 07 6	1,750 00	-	1,750 00	158	-
16	14	Leominster	10 61 3	9,350 00	-	9,350 00	881	-
6	15	Clinton	10 39	17,361 72	-	17,361 72	1,671	-
18	16	Brookfield	10 24	4,800 00	166 80	4,966 80	485	\$37 00
27	17	Leicester	10 21-7	5,400 00	260 13	5,660 13	554	-
31	18	Harvard	10 15-2	2,000 00	-	2,000 00	197	-
30	19	Charlton	10 03-3	3,000 00	-	3,000 00	299	-
25	20	Milford	9 98-7	18,702 00	214 04	18,916 04	1,894	-
17	21	Douglas	9 95-1	4,100 00	-	4,100 00	412	-
14	22	Athol	9 91-7	6,500 00	214 04	6,714 04	677	-
32	23	Princeton	9 64	1,600 00	-	1,600 00	166	-
39	24	Westborough	9 55-8	8,000 00	-	8,000 00	837	-
20	25	Ashburnham	9 53-3	2,800 00	116 95	2,916 95	806	-
15	26	Westminster	9 32-2	2,750 00	-	2,750 00	295	174 00

SCHOOL-RETURNS.

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55	27	Sturbridge .	9 30 8	3,500 00	-	3,500 00	376
22	28	Gardner .	9 24 4	7,500 00	255 89	7,755 89	839
33	29	Hubbardston .	9 00 9	2,000 00	-	2,000 00	222
38	30	North Brookfield .	9 00	7,000 00	191 26	7,191 26	799
24	31	Lunenburg .	8 98	1,200 00	93 24	1,293 24	144
43	32	West Brookfield .	8 90 2	3,000 00	-	3,000 00	337
35	33	Grafton .	8 76 5	7,100 00	-	7,100 00	810
19	34	Northbridge .	8 70 6	7,400 00	-	7,400 00	850
40	35	Faxton .	8 62 1	1,000 00	-	1,000 00	116
21	36	Templeton .	8 56	4,500 00	139 34	4,639 34	542
28	37	Millbury .	8 28 2	8,000 00	-	8,000 00	966
37	38	Blackstone .	8 20 2	7,500 00	357 31	7,857 31	958
49	39	Bolton .	8 10 8	1,200 00	-	1,200 00	148
23	40	Royalston .	8 09 8	1,500 00	70 99	1,570 99	194
34	41	Oxford .	8 08 1	4,000 00	-	4,000 00	495
29	42	Southbridge .	8 06 4	10,314 00	-	10,314 00	1,279
45	43	Phillipston .	7 33 6	800 00	73 11	873 11	119
42	44	Dudley .	7 21 6	4,200 00	151 52	4,351 52	603
53	45	Mendon .	7 18 3	1,300 00	107 94	1,407 94	196
44	46	Winchendon .	7 07 4	4,824 63	-	4,824 63	682
36	47	Rutland .	6 98 7	1,800 00	-	1,800 00	229
46	48	Webster .	6 98 5	6,300 00	259 60	6,559 60	989
41	49	Warren .	6 96 9	6,000 00	-	6,000 00	861
47	50	Spencer .	6 93 7	10,350 00	-	10,350 00	1,492
50	51	Dana .	6 76 1	700 00	30 20	730 20	108
48	52	Oakham .	6 24 2	750 00	92 72	842 72	135
51	53	Holden .	6 20 8	2,818 57	194 44	3,013 01	485
57	54	Sutton .	5 74	4,150 00	-	4,150 00	723
52	55	Berlin .	5 69 1	1,000 00	86 89	1,086 89	191
58	56	Auburn .	5 51 9	1,150 00	113 91	1,263 91	229
54	57	West Boylston .	5 37 5	3,300 00	-	3,300 00	614
56	58	Hardwick .	5 30 4	2,300 00	108 08	2,408 08	454
							187 50
							16 00

GRADUATED TABLES—FIRST SERIES.

Showing the Comparative Amount of Money appropriated by the different Counties in the State for the Education of each Child between the Ages of 5 and 15 Years in the County.

For 1879-80.	COUNTIES.	Sum appropriated by counties for each child between 5 and 15 years of age.	Amount raised by taxes for the support of Schools.	Income of Funds, with Dog Tax, appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.	Amount contributed for board and fuel.
For 1880-81.							
1	Suffolk	\$24 32-1	\$1,352,646 80	\$152,971 91	\$1,505,618 71	61,905	—
2	Norfolk	14 41-4	244,827 68	3,449 77	248,277 45	17,225	\$298 00
3	Middlesex	13 88-8	770,279 86	3,763 16	774,043 02	55,736	320 56
4	Essex	11 07-3	471,656 43	4,799 17	476,455 60	43,028	1,200 00
5	Bristol	10 98-4	266,555 13	3,466 60	270,021 73	24,584	27 00
6	Hampden	10 30-6	194,660 37	2,443 23	197,103 23	19,125	796 70
7	Plymouth	10 14-8	128,197 83	2,639 77	130,827 60	12,892	—
8	Barnstable	9 97-9	54,998 55	1,632 41	56,630 96	5,675	64 00
9	Worcester	9 78-9	408,106 93	3,937 65	412,064 58	42,094	414 50
10	Dukes	8 89-6	5,320 00	35 32	5,355 32	602	—
11	Franklin	8 30-9	52,383 00	1,265 33	53,658 33	6,458	528 50
12	Hampshire	8 22-8	70,853 12	1,432 40	72,285 52	8,785	1,177 12
13	Nantucket	7 70-5	4,314 55	—	4,314 55	560	—
14	Berkshire	7 64-7	105,913 86	1,225 64	107,139 50	14,011	463 25
AGGREGATE FOR THE STATE.							
	STATE	\$13 79-3	\$4,130,714 11	\$183,072 36	\$4,313,786 47	312,680	\$5,279 68

GRADUATED TABLES — FIRST SERIES.

Showing the Comparative Amount of Money, including Voluntary Contributions, appropriated by the different Counties in the State for the Education of each Child between the Ages of 5 and 15 Years in the County.

For 1879-80.	For 1880-81.	COUNTIES.	TOTALS.
1	1	Suffolk	\$24 82·1
3	2	Norfolk	14 43·1
2	3	Middlesex	13 89·2
4	4	Essex	11 10·1
6	5	Bristol	10 98·5
5	6	Hampden	10 34·8
7	7	Plymouth	10 14·8
8	8	Barnstable	9 99
10	9	Worcester	9 79·9
9	10	Dukes	8 89·6
12	11	Franklin	8 39·1
11	12	Hampshire	8 36·2
14	13	Nantucket	7 70·5
13	14	Berkshire	7 67·9
Aggregate for the State			\$13 81·3

GRADUATED TABLES — SECOND SERIES.

THE next Table exhibits the appropriation of the cities and towns, as compared with their respective valuations in 1881.

The first column shows the rank of the cities and towns in a similar Table for 1879-80, according to their valuation in 1880.

The second column indicates, in numerical order, the precedence of the cities and towns in respect to the liberality of their appropriations for 1880-81, according to their valuation in 1881.

The third consists of the names of the cities and towns, as numerically arranged.

The fourth shows the percentage of taxable property appropriated to the support of the public schools. The result is equivalent in value to mills and hundredths of mills. The decimals are carried to three figures, in order to indicate more perfectly the distinction between the different towns. The first figure (mills) expresses the principal value, and is separated from the last two figures by a point.

The appropriations for schools are not given in the following Table, as they may be found by referring to the previous Tables; also in the Abstract of School>Returns, commencing on page ii. These appropriations include the sum raised by taxes, the income of the surplus revenue, and of such other funds as the towns may appropriate at their option, either to support common schools, or to pay ordinary municipal expenses. The income of other local funds, and the voluntary contributions, are not included in the estimate. The appropriations are reckoned the same as in the first series of Tables, and for the same reasons.

The amount of taxable property, in each city and town, according to the last State valuation, is also omitted, as it is already given in the foregoing Abstract of School>Returns.

If the rank assigned to towns in the next Tables is compared with the rank of the same town in the former series, it will be seen that they hold, in many instances, a very different place in the scale.

GRADUATED TABLES—SECOND SERIES.

[FOR THE STATE.]

A Graduated Table, in which all the Towns in the State are numerically arranged according to the Percentage of their Taxable Property appropriated to the Support of Public Schools for the year 1880-81.

For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Val- uation appropriated to Public Schools— equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Val- uation appropriated to Public Schools— equivalent to mills and hundredths of mills.
1	1	HAWLEY .	\$.006-63	92	34	W. Stockb'dge,	\$.004-23
2	2	Gay Head .	6-12	38	35	Marlborough .	4-19
3	3	Truro .	5-93	35	36	Rehoboth .	4-19
4	4	Orleans .	5-58	20	37	Haverhill .	4-17
6	5	Wellfleet .	5-57	48	38	Mansfield .	4-17
7	6	Sandwich .	5-33	61	39	Belchertown .	4-13
12	7	Chatham .	5-24	47	40	Rowe .	4-10
41	8	Peru .	5-18	27	41	Milford .	4-09
9	9	Monroe .	5-07	79	42	Brookfield .	4-08
19	10	South Hadley .	4-87	85	43	Palmer .	4-08
15	11	Mashpee .	4-85	59	44	Bradford .	4-07
16	12	Upton .	4-81	45	45	Pelham .	4-06
83	13	Otis .	4-75	5	46	Provincetown .	4-03
17	14	Wareham .	4-75	28	47	Chicopee .	4-02
30	15	Granville .	4-74	43	48	Attleborough .	4-01
11	16	Dudley .	4-68	68	49	Bridgewater .	4-01
13	17	Dennis .	4-62	55	50	Heath .	3-99
8	18	Stoughton .	4-62	116	51	Hudson .	3-97
40	19	Georgetown .	4-61	73	52	Lee .	3-95
24	20	Holbrook .	4-59	42	53	Northbridge .	3-94
49	21	Medway .	4-57	63	54	Stoneham .	3-93
26	22	Weymouth .	4-50	58	55	Shelburne .	3-92
69	23	Blandford .	4-49	66	56	Monterey .	3-91
14	24	Amesbury .	4-40	65	57	Blackstone .	3-90
21	25	Harwich .	4-38	261	58	Greenwich .	3-90
34	26	Gloucester .	4-35	74	59	Merrimac .	3-90
44	27	Randolph .	4-35	76	60	Walpole .	3-90
10	28	Eastham .	4-34	39	61	Shutesbury .	3-88
32	29	Hyde Park .	4-34	115	62	Saugus .	3-85
37	30	Templeton .	4-33	101	63	Ashby .	3-84
22	31	Abington .	4-32	52	64	Granby .	3-83
93	32	Erving .	4-24	23	65	Becket .	3-82
70	33	Monson .	4-24	109	66	N. Brookfield .	3-82

For 1879-80, by the State Valuation of 18-0.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valua- tion appropriated to Public Schools— equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valua- tion appropriated to Public Schools— equivalent to mills and hundredths of mills.
72	67	Florida .	3-003-80	137	117	Longmeadow .	3-003-42
119	68	Northfield .	3-80	105	118	Buckland .	3-41
71	69	Plymouth .	3-80	161	119	Methuen .	3-41
31	70	Wrentham .	3-79	130	120	Middleboro' .	3-41
125	71	Dighton .	3-77	163	121	Raynham .	3-41
46	72	Bellingham .	3-76	96	122	Ayer .	3-40
64	73	Deerfield .	3-75	143	123	Ashland .	3-39
80	74	Ashfield .	3-74	103	124	Westminster .	3-38
50	75	E Bridgewater, .	3-74	178	125	Wayland .	3-36
67	76	Foxborough .	3-74	51	126	Brockton .	3-35
106	77	Charlemont .	3-73	155	127	Fairhaven .	3-35
87	78	Waltham .	3-73	171	128	Wakefield .	3-35
114	79	North Adams .	3-72	149	129	Hanson .	3-34
89	80	Berkley .	3-70	90	130	Clarksburg .	3-33
56	81	Warwick .	3-68	121	131	Pittsfield .	3-33
25	82	Douglas .	3-67	100	132	Cheshire .	3-32
62	83	Marblehead .	3-67	154	133	Lexington .	3-32
29	84	Wendell .	3-66	176	134	Needham .	3-32
77	85	Rockland .	3-65	127	135	Ipswich .	3-31
175	86	Woburn .	3-65	75	136	Arlington .	3-28
207	87	Rochester .	3-64	212	137	Conway .	3-27
78	88	Grafton .	3-63	141	138	Spencer .	3-26
82	89	Salisbury .	3-63	122	139	Westhampton, .	3-26
54	90	Adams .	3-62	133	140	Petersham .	3-25
117	91	Millbury .	3-61	128	141	Barre .	3-24
18	92	Clinton .	3-60	81	142	Rutland .	3-24
90	93	N. Andover .	3-60	57	143	Washington .	3-24
83	94	Tyngsborough, .	3-57	202	144	Montague .	3-23
86	95	Paxton .	3-56	157	145	Westborough .	3-23
120	96	Colrain .	3-55	94	146	Fitchburg .	3-22
153	97	Southborough, .	3-54	118	147	New Marlboro' .	3-21
183	98	Danvers .	3-53	140	148	Phillipston .	3-21
124	99	Dedham .	3-53	134	149	Sandisfield .	3-20
206	100	Hinsdale .	3-53	146	150	Uxbridge .	3-20
88	101	Barnstable .	3-52	142	151	W. Boylston .	3-20
91	102	New Salem .	3-52	173	152	Winchester .	3-20
156	103	Leicester .	3-50	53	153	Norfolk .	3-19
104	104	Hopkinton .	3-49	189	154	Townsend .	3-19
198	105	Orange .	3-49	135	155	Chelmsford .	3-18
98	106	Franklin .	3-48	153	156	Leverett .	3-18
95	107	Canton .	3-47	136	157	Greenfield .	3-17
102	108	Groveland .	3-47	150	158	Peabody .	3-17
185	109	W. Bridgewater, .	3-47	172	159	Reading .	3-17
205	110	W. Brookfield, .	3-47	148	160	Ashburnham .	3-16
177	111	Sturbridge .	3-46	108	161	Montgomery .	3-16
164	112	Boylston .	3-45	159	162	Gardner .	3-14
97	113	Quincy .	3-45	113	163	Webster .	3-14
160	114	Southbridge .	3-45	126	164	Holliston .	3-13
107	115	Natick .	3-44	123	165	Newburyport .	3-12
84	116	Ware .	3-44	144	166	Norwood .	3-11

SCHOOL-RETURNS.

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For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
192	167	Scituate . .	\$.003-10	225	217	Wilbraham . .	\$.002-79
193	168	S. Scituate . .	3-10	180	218	Worthington . .	2-79
197	169	Malden . .	3-10	224	219	Littleton . .	2-78
233	170	Westport . .	3-09	235	220	Rowley . .	2-77
138	171	Medford . .	3-08	191	221	Cambridge . .	2-75
147	172	Lakeville . .	3-07	131	222	Prescott . .	2-75
60	173	Chesterfield . .	3-06	169	223	Tolland . .	2-75
152	174	Hingham . .	3-06	36	224	Plainfield . .	2-74
237	175	Shirley . .	3-06	238	225	Concord . .	2-73
132	176	Hampden . .	3-05	274	226	Williamsburg . .	2-73
167	177	Leyden . .	3-05	268	227	Shrewsbury . .	2-72
162	178	Plympton . .	3-05	269	228	Wenham . .	2-72
184	179	Frammingham . .	3-04	168	229	Lynn . .	2-71
145	180	Sterling . .	3-04	245	230	Seekonk . .	2-70
218	181	Sutton . .	3-03	241	231	Southampton . .	2-69
165	182	Holden . .	3-02	285	232	Halifax . .	2-68
240	183	Chester . .	3-01	252	233	Auburn . .	2-67
203	184	Swansea . .	3-01	229	234	Dartmouth . .	2-67
182	185	W. Newbury . .	2-99	246	235	Hanover . .	2-66
139	186	N. Reading . .	2-98	266	236	Norton . .	2-66
110	187	Somerville . .	2-98	223	237	Gt. Barringt'n, . .	2-65
170	188	Westfield . .	2-98	310	238	Burlington . .	2-64
194	189	Easthampton . .	2-97	231	239	Lenox . .	2-63
151	190	Freetown . .	2-97	312	240	Cummington . .	2-62
112	191	Melrose . .	2-97	260	241	Winchendon . .	2-62
221	192	Salem . .	2-97	265	242	New Bedford . .	2-61
200	193	Tisbury . .	2-97	219	243	Lawrence . .	2-60
222	194	Wilmington . .	2-96	272	244	W. Springfield, . .	2-59
209	195	Oxford . .	2-95	217	245	Dana . .	2-57
129	196	Brimfield . .	2-94	255	246	Tyringham . .	2-56
179	197	Worcester . .	2-94	247	247	Dover . .	2-54
211	198	Andover . .	2-93	248	248	Duxbury . .	2-54
166	199	Warren . .	2-93	263	249	Marshfield . .	2-54
181	200	Charlton . .	2-92	174	250	Pembroke . .	2-54
208	201	Chelsea . .	2-92	243	251	Amherst . .	2-53
199	202	Sheffield . .	2-92	259	252	Braintree . .	2-53
201	203	Acushnet . .	2-90	249	253	Carver . .	2-52
187	204	Middlefield . .	2-90	228	254	Taunton . .	2-52
190	205	Athol . .	2-88	281	255	Rockport . .	2-50
111	206	Ludlow . .	2-88	242	256	Springfield . .	2-50
230	207	Northborough, . .	2-87	226	257	Dracut . .	2-49
244	208	New Braintree, . .	2-86	278	258	Leominster . .	2-49
258	209	Whately . .	2-86	220	259	Northampton . .	2-49
196	210	Sunderland . .	2-85	216	260	Savoy . .	2-49
213	211	Huntington . .	2-84	257	261	Hubbardston . .	2-48
251	212	Williamstown, . .	2-84	234	262	Agawam . .	2-47
186	213	Westford . .	2-83	264	263	Bolton . .	2-46
195	214	Yarmouth . .	2-82	239	264	Somerset . .	2-46
236	215	Holyoke . .	2-79	303	265	Harvard . .	2-41
232	216	Lowell . .	2-79	253	266	Egremont . .	2-39

For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
273	267	Bedford . .	\$.002-35	206	307	Lanesborough,	\$.002-04
256	268	Middleton . .	2-34	267	308	Revere . .	2-04
262	269	Oakham . .	2-34	301	309	Enfield . .	2-03
250	270	Boxborough . .	2-33	333	310	Bernardston . .	2-02
314	271	Dalton . .	2-33	305	311	Windsor . .	2-02
291	272	Hardwick . .	2-33	313	312	Stockbridge . .	2-01
277	273	Everett . .	2-32	311	313	Cohasset . .	2-00
280	274	Mendon . .	2-30	276	314	Sharon . .	1-96
215	275	Royalston . .	2-30	302	315	S. Abington . .	1-95
294	276	Maynard . .	2-27	328	316	Carlisle . .	1-93
227	277	Newton . .	2-27	307	317	Groton . .	1-92
280	278	Fall River . .	2-26	300	318	Watertown . .	1-91
300	279	Hadley . .	2-24	319	319	Gill . .	1-89
326	280	Richmond . .	2-24	331	320	Princeton . .	1-89
253	281	Acton . .	2-22	304	321	Lunenburg . .	1-87
287	282	Sudbury . .	2-22	308	322	Tewksbury . .	1-86
297	283	Swampscott . .	2-22	330	323	Beverly . .	1-83
318	284	Alford . .	2-21	320	324	Nantucket . .	1-83
284	285	Berlin . .	2-21	321	325	Holland . .	1-82
295	286	Boston . .	2-18	329	326	Billerica . .	1-80
210	287	Easton . .	2-18	286	327	Boxford . .	1-79
271	288	Kingston . .	2-18	324	328	Pepperell . .	1-71
299	289	Medfield . .	2-18	327	329	Southwick . .	1-63
270	290	Brewster . .	2-17	323	330	Mattapoisett . .	1-59
214	291	Marion . .	2-17	306	331	Falmouth . .	1-57
316	292	Sherborn . .	2-17	332	332	Brookline . .	1-52
290	293	Goshen . .	2-16	337	333	Hatfield . .	1-51
317	294	Lincoln . .	2-16	334	334	Hamilton . .	1-42
282	295	Weston . .	2-14	279	335	Belmont . .	1-33
292	296	Chilmark . .	2-13	339	336	New Ashford . .	1-32
288	297	Dunstable . .	2-12	338	337	Milton . .	1-30
275	298	Lancaster . .	2-12	254	338	Russell . .	1-23
322	299	Topsfield . .	2-12	336	339	Lynnfield . .	1-07
325	300	Wales . .	2-12	342	340	Nahant . .	0-90
298	301	Edgartown . .	2-10	341	341	Winthrop . .	0-96
188	302	Mt. Wash'gton,	2-10	340	342	Manchester . .	0-82
315	303	Newbury . .	2-09	345	343	Cottage City . .	0-73
204	304	Essex . .	2-08	344	344	Hull . .	0-61
335	305	Hancock . .	2-08	343	345	Gosnold . .	0-48
293	306	Stow . .	2-05		346	Wellesley *	

* New town, incorporated April 6, 1881; returns included with Needham.

GRADUATED TABLES—SECOND SERIES.

[COUNTY TABLES.]

In which all the Towns in the respective Counties in the State are numerically arranged according to the Percentage of their Taxable Property appropriated for the Support of Public Schools for the year 1880-81.

BARNSTABLE COUNTY.

For 1879-80, by the State Valuation of 1890.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1890.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	1	TRURO . .	\$.005-93	10	8	Harwich . .	\$.004-38
2	2	Orleans . .	5-58	6	9	Eastham . .	4-34
4	3	Wellfleet . .	5-57	3	10	Provincetown . .	4-03
5	4	Sandwich . .	5-33	11	11	Barnstable . .	3-52
7	5	Chatham . .	5-24	12	12	Yarmouth . .	2-82
9	6	Mashpee . .	4-85	13	13	Brewster . .	2-17
8	7	Dennis . .	4-62	14	14	Falmouth . .	1-57

BERKSHIRE COUNTY.

3	1	PERU . .	\$.005-18	17	17	Sheffield . .	\$.002-92
2	2	Otis . .	4-75	22	18	Williamstown, . .	2-84
10	3	W. Stockb'dge, . .	4-23	20	19	Gt. Barringt'n, . .	2-65
8	4	Lee . .	3-95	21	20	Lenox . .	2-63
6	5	Monterey . .	3-91	24	21	Tyringham . .	2-56
1	6	Becket . .	3-82	19	22	Savoy . .	2-49
7	7	Florida . .	3-80	23	23	Egremont . .	2-39
12	8	North Adams . .	3-72	28	24	Dalton . .	2-33
4	9	Adams . .	3-62	30	25	Richmond . .	2-24
18	10	Hinsdale . .	3-53	29	26	Alford . .	2-21
9	11	Clarksburg . .	3-33	16	27	Mt. Wash'gton, . .	2-10
14	12	Pittsfield . .	3-33	31	28	Hancock . .	2-08
11	13	Cheshire . .	3-32	25	29	Lanesborough, . .	2-04
5	14	Washington . .	3-24	26	30	Windsor . .	2-02
13	15	New Marlboro', . .	3-21	27	31	Stockbridge . .	2-01
15	16	Sandisfield . .	3-20	32	32	New Ashford . .	1-32

BOARD OF EDUCATION.

BRISTOL COUNTY.

For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools— equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools— equivalent to mills and hundredths of mills.
1	1	REHOBOTH .	\$.004-19	9	11	Acushnet .	\$.002-90
3	2	Mansfield .	4-17	16	12	Seekonk .	2-70
2	3	Attleborough .	4-01	13	13	Dartmouth .	2-67
5	4	Dighton .	3-77	18	14	Norton .	2-66
4	5	Berkley .	3-70	17	15	New Bedford .	2-61
8	6	Raynham .	3-41	12	16	Taunton .	2-52
7	7	Fairhaven .	3-35	15	17	Somerset .	2-46
14	8	Westport .	3-09	19	18	Fall River .	2-26
10	9	Swanzy .	3-01	11	19	Easton .	2-18
6	10	Freetown .	2-97				

DUKES COUNTY.

1	1	GAY HEAD .	\$.006-12	4	4	Edgartown .	\$.002-10
2	2	Tisbury .	2-97	6	5	Cottage City .	0-73
3	3	Chilmark .	2-13	5	6	Gosnold .	0-48

ESSEX COUNTY.

4	1	GEORGETOWN .	\$.004-61	20	19	Andover .	\$.002-93
1	2	Amesbury .	4-40	23	20	Rowley .	2-77
3	3	Gloucester .	4-35	25	21	Wenham .	2-72
2	4	Haverhill .	4-17	16	22	Lynn .	2-71
5	5	Bradford .	4-07	21	23	Lawrence .	2-60
7	6	Merrimac .	3-90	26	24	Rockport .	2-50
11	7	Saugus .	3-85	24	25	Middleton .	2-34
6	8	Marblehead .	3-67	28	26	Swampscott .	2-22
	9	Salisbury .	3-63	30	27	Topsfield .	2-12
9	10	N. Andover .	3-60	29	28	Newbury .	2-09
18	11	Danvers .	3-53	19	29	Essex .	2-08
10	12	Groveland .	3-47	31	30	Beverly .	1-83
15	13	Methuen .	3-41	27	31	Boxford .	1-79
13	14	Ipswich .	3-31	32	32	Hamilton .	1-42
14	15	Peabody .	3-17	33	33	Lynnfield .	1-07
12	16	Newburyport .	3-12	35	34	Nahant .	0-99
17	17	W. Newbury .	2-99	34	35	Manchester .	0-82
22	18	Salem .	2-97				

SCHOOL-RETURNS.

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FRANKLIN COUNTY.

For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	1	HAWLEY . .	\$.006-63	16	14	Colrain . .	\$.003-55
2	2	Monroe . .	5-07	11	15	New Salem . .	3-52
12	3	Erving . .	4-24	21	16	Orange . .	3-49
5	4	Rowe . .	4-10	13	17	Buckland . .	3-41
6	5	Heath . .	3-99	23	18	Conway . .	3-27
8	6	Shelburne . .	3-92	22	19	Montague . .	3-23
4	7	Shutesbury . .	3-88	18	20	Leverett . .	3-18
15	8	Northfield . .	3-80	17	21	Greenfield . .	3-17
9	9	Deerfield . .	3-75	19	22	Leyden . .	3-05
10	10	Ashfield . .	3-74	24	23	Whately . .	2-86
14	11	Charlemont . .	3-73	20	24	Sunderland . .	2-85
7	12	Warwick . .	3-68	26	25	Bernardston . .	2-02
3	13	Wendell . .	3-66	25	26	Gill . .	1-89

HAMPDEN COUNTY.

2	1	GRANVILLE . .	\$.004.74	7	12	Ludlow . .	\$.002-88
3	2	Blandford . .	4-49	15	13	Holyoke . .	2-79
4	3	Monson . .	4-24	13	14	Wilbraham . .	2-79
5	4	Palmer . .	4-08	11	15	Tolland . .	2-75
1	5	Chicopee . .	4-02	19	16	W.Springfield, . .	2-59
10	6	Longmeadow . .	3-42	17	17	Springfield . .	2-50
6	7	Montgomery . .	3-16	14	18	Agawam . .	2-47
9	8	Hampden . .	3-05	21	19	Wales . .	2-12
16	9	Chester . .	3-01	20	20	Holland . .	1-82
12	10	Westfield . .	2-98	22	21	Southwick . .	1-63
8	11	Brimfield . .	2-94	18	22	Russell . .	1-23

HAMPSHIRE COUNTY.

1	1	SOUTH HADLEY . .	\$.004-87	9	13	Prescott . .	\$.002-75
6	2	Belchertown . .	4-13	2	14	Plainfield . .	2-74
3	3	Pelham . .	4-06	18	15	Williamsburg . .	2-73
17	4	Greenwich . .	3-90	15	16	Southampton . .	2-69
4	5	Granby . .	3-83	22	17	Cummington . .	2-62
7	6	Ware . .	3-44	16	18	Amherst . .	2-53
8	7	Westhampton, . .	3-26	14	19	Northampton . .	2-49
5	8	Chesterfield . .	3-06	21	20	Hadley . .	2-24
12	9	Easthampton . .	2-97	19	21	Goshen . .	2-16
11	10	Middlefield . .	2-90	20	22	Enfield . .	2-03
13	11	Huntington . .	2-84	23	23	Hatfield . .	1-51
10	12	Worthington . .	2-79				

BOARD OF EDUCATION.

MIDDLESEX COUNTY.

For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Val- uation appropriated to Public Schools— equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Val- uation appropriated to Public Schools— equivalent to mills and hundredths of mills.
1	1	MARLBOROUGH .	\$.004-19	29	28	Wilmington .	\$.002-96
12	2	Hudson .	3-97	25	29	Westford .	2-83
2	3	Stoneham .	3-93	33	30	Lowell .	2-79
7	4	Ashby .	3-84	30	31	Littleton .	2-78
5	5	Waltham .	3-73	27	32	Cambridge .	2-75
22	6	Woburn .	3-65	35	33	Concord .	2-73
4	7	Tyngsborough,	3-57	49	34	Burlington .	2-64
8	8	Hopkinton .	3-49	31	35	Dracut .	2-49
9	9	Natick .	3-44	37	36	Bedford .	2-35
6	10	Ayer .	3-40	36	37	Boxborough .	2-33
17	11	Ashland .	3-39	38	38	Everett .	2-32
23	12	Wayland .	3-36	45	39	Maynard .	2-27
19	13	Wakefield .	3-35	32	40	Newton .	2-27
18	14	Lexington .	3-32	41	41	Acton .	2-22
3	15	Arlington .	3-28	42	42	Sudbury .	2-22
21	16	Winchester .	3-20	50	43	Sherborn .	2-17
26	17	Townsend .	3-19	51	44	Lincoln .	2-16
14	18	Chelmsford .	3-18	40	45	Weston .	2-14
20	19	Reading .	3-17	43	46	Dunstable .	2-12
13	20	Holliston .	3-13	44	47	Stow .	2-05
28	21	Malden .	3-10	53	48	Carlisle .	1-93
15	22	Medford .	3-08	47	49	Groton .	1-92
34	23	Shirley .	3-06	46	50	Watertown .	1-91
24	24	Framingham .	3-04	48	51	Tewksbury .	1-86
16	25	No. Reading .	2-98	54	52	Billerica .	1-80
10	26	Somerville .	2-98	52	53	Pepperell .	1-71
11	27	Melrose .	2-97	39	54	Belmont .	1-33

NANTUCKET COUNTY.

		NANTUCKET	\$.001-83
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NORFOLK COUNTY.

1	1	STOUGHTON .	\$.004-62	10	10	Foxborough .	\$.003-74
2	2	Holbrook .	4-59	15	11	Dedham .	3-53
8	3	Medway .	4-57	14	12	Franklin .	3-48
3	4	Weymouth .	4-50	12	13	Canton .	3-47
6	5	Randolph .	4-35	13	14	Quincy .	3-45
5	6	Hyde Park .	4-34	17	15	Needham* .	3-32
11	7	Walpole .	3-90	9	16	Norfolk .	3-19
4	8	Wrentham .	3-79	16	17	Norwood .	3-11
7	9	Bellingham .	3-76	18	18	Dover .	2-54

* Includes Wellesley, incorporated April 6, 1881.

SCHOOL-RETURNS.

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NORFOLK COUNTY — CONCLUDED.

For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1879-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
19	19	Braintree .	\$.002-53	23	23	Brookline .	\$.001-52
21	20	Medfield .	2-18	24	24	Milton .	1-30
22	21	Cohasset .	2-00	-	25	Wellesley .	-
20	22	Sharon .	1-96				

PLYMOUTH COUNTY.

1	1	Wareham .	\$.004-75	11	15	Hingham .	\$.003-06
2	2	Abington .	4-32	12	16	Plympton .	3-05
5	3	Bridgewater .	4-01	24	17	Halifax .	2-68
6	4	Plymouth .	3-80	19	18	Hanover .	2-66
3	5	E. Bridgew'r .	3-74	20	19	Duxbury .	2-54
7	6	Rockland .	3-65	22	20	Marshfield .	2-54
17	7	Rochester .	3-64	13	21	Pembroke .	2-54
14	8	W. Bridgew'r, .	3-47	21	22	Carver .	2-52
8	9	Middleboro' .	3-41	23	23	Kingston .	2-18
4	10	Brockton .	3-35	18	24	Marion .	2-17
10	11	Hanson .	3-34	25	25	S. Abington .	1-95
15	12	Scituate .	3-10	26	26	Mattapoisett .	1-59
16	13	S. Scituate .	3-10	27	27	Hull .	0-61
9	14	Lakeville .	3-07				

SUFFOLK COUNTY.

1	1	CHELSEA .	\$.002-92	2	3	Revere .	\$.002-04
3	2	Boston .	2-18	4	4	Winthrop .	0-96

WORCESTER COUNTY.

2	1	UPTON .	\$.004-81	17	11	Millbury .	\$.003-61
1	2	Dudley .	4-68	3	12	Clinton .	3-60
6	3	Templeton .	4-33	12	13	Paxton .	3-56
5	4	Milford .	4-09	28	14	Southborough,	3-54
10	5	Brookfield .	4-08	26	15	Leicester .	3-50
7	6	Northbridge .	3-94	38	16	W. Brookfield,	3-47
8	7	Blackstone .	3-90	34	17	Sturbridge .	3-46
15	8	N. Brookfield .	3-82	31	18	Boylston .	3-45
4	9	Douglas .	3-67	30	19	Southbridge .	3-45
9	10	Grafton .	3-63	14	20	Westminster .	3-38

BOARD OF EDUCATION.

WORCESTER COUNTY — CONCLUDED.

For 1878-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1878-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
21	21	Spencer .	\$.003-26	37	40	Athol .	\$.002-88
19	22	Petersham .	3-25	43	41	Northborough,	2-87
18	23	Barre .	3-24	44	42	New Braintree,	2-86
11	24	Rutland .	3-24	50	43	Shrewsbury .	2-72
27	25	Westborough .	3-23	45	44	Auburn .	2-67
13	26	Fitchburg .	3-22	47	45	Winchendon .	2-62
20	27	Phillipston .	3-21	41	46	Dana .	2-57
24	28	Uxbridge .	3-20	52	47	Leominster .	2-49
22	29	W. Boylston .	3-20	46	48	Hubbardston .	2-48
25	30	Ashburnham .	3-16	49	49	Bolton .	2-46
29	31	Gardner .	3-14	56	50	Harvard .	2-41
16	32	Webster .	3-14	48	51	Oakham .	2-34
23	33	Sterling .	3-04	55	52	Hardwick .	2-33
42	34	Sutton .	3-03	53	53	Mendon .	2-30
32	35	Holden .	3-02	40	54	Royalston .	2-30
39	36	Oxford .	2-95	54	55	Berlin .	2-21
35	37	Worcester .	2-94	51	56	Lancaster .	2-12
33	38	Warren .	2-93	58	57	Princeton .	1-89
36	39	Charlton .	2-92	57	58	Lunenburg .	1-87

SCHOOL-RETURNS.

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GRADUATED TABLES — SECOND SERIES.

Showing the different Counties in the State, numerically arranged, according to the Percentage of their Taxable Property appropriated for the Support of Public Schools for the year 1880-81.

For 1879-80, by the State Val- uation of 1880.	COUNTIES.	Percentage of Valu- ation appropriated to Public Schools— equivalent to mills and hundredths of mills.	Amount of money raised by taxes for the support of Public Schools.	Income of surplus Revenue and of similar funds ap- propriated for Pub- lic Schools.	TOTAL.	Valuation of 1880.	Amount contrib- uted for board and fuel.
1	BARNSTABLE . . .	\$.003-64	\$54,998 55	\$1,632 41	\$56,630 96	\$15,555,286 00	\$64 00
2	Franklin . . .	3-39	52,383 00	1,265 33	53,658 33	15,808,509 00	528 50
3	Plymouth . . .	3-15	128,197 83	2,629 77	130,827 60	41,597,896 00	—
10	Worcester . . .	3-14	408,106 93	3,957 65	412,064 58	131,054,438 00	414 50
5	Berkshire . . .	3-13	105,913 86	1,225 64	107,139 50	34,197,842 00	453 25
6	Essex . . .	2-93	471,656 43	4,799 17	476,455 60	162,413,423 00	1,200 00
2	Middlesex . . .	2-88	770,279 86	3,763 16	774,043 02	268,986,013 00	320 56
7	Hampshire . . .	2-86	70,853 12	1,432 40	72,285 52	25,285,744 00	1,177 12
8	Hampden . . .	2-83	194,660 37	2,443 23	197,103 60	69,758,223 00	796 70
9	Norfolk . . .	2-78	244,827 68	3,449 77	248,277 45	89,424,009 00	298 00
11	Bristol . . .	2-61	266,555 13	3,466 60	270,021 73	103,291,547 00	27 00
12	Suffolk . . .	2-20	1,352,646 80	152,971 91	1,505,618 71	685,321,125 00	—
13	Nantucket . . .	1-83	4,314 55	—	4,314 55	2,352,123 00	—
14	Dukes . . .	1-68	5,320 00	35 32	5,355 32	3,190,798 00	—

AGGREGATE FOR THE STATE.

14 Counties . . .	\$.002-62	\$4,130,714 11	\$133,072 36	\$4,313,786 47	\$1,648,239,976 00	\$5,279 63
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GRADUATED TABLES — SECOND SERIES.

Showing the Arrangement of Counties according to their Appropriations, including Voluntary Contributions.

If the counties are numerically arranged, according to the percentage of their valuations appropriated for public schools, voluntary contributions of board and fuel being added to the sum raised by tax and to the income of the surplus revenue and other funds, as severally given in the previous table, the order of precedence will be as follows : —

For 1875-80, by the State Valuation of 1880.	For 1880-81, by the State Valuation of 1881.	COUNTIES.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	1	BARNSTABLE	\$.003-64
3	2	Franklin	3-43
5	3	Berkshire	3-15
4	4	Plymouth	3-15
10	5	Worcester	3-15
6	6	Essex	2-94
7	7	Hampshire	2-81
2	8	Middlesex	2-88
8	9	Hampden	2-83
9	10	Norfolk	2-78
11	11	Bristol	2-61
12	12	Suffolk	2-20
13	13	Nantucket	1-83
14	14	Dukes	1-68
Aggregate for the State			\$.002-62

GRADUATED TABLES — THIRD SERIES.

THE following Table exhibits the ratio of the average attendance for the year in each town to the whole number of children between 5 and 15, according to the returns.

The ratio is expressed in decimals, continued to four figures, the first two of which are separated from the last two by a point, as only the two former are essential to denote the real per cent. Yet the ratios of many towns are so nearly equal, or the difference is so small a fraction, that the first two decimals, with the appropriate mathematical sign appended, indicate no distinction. The continuation of the decimals, therefore, is simply to indicate a priority in cases where, without such continuation, the ratios would appear to be precisely similar.

In several cases the ratio of attendance exhibited in the Table is over 100 per cent. These results, supposing the registers to have been properly kept and the returns correctly made, are to be thus explained: The average attendance upon all Public Schools being compared with the whole number of children in the town between 5 and 15, the result may be over 100 per cent, because the attendance of children under 5 and over 15 may more than compensate for the absence of children between those ages. The rank of the towns standing highest in the following Table is in accordance with the returns. As the returns are often incorrect, the rank may be too high in some cases.

GRADUATED TABLES — THIRD SERIES.

[FOR THE STATE.]

In which all the Towns in the State are numerically arranged according to the AVERAGE ATTENDANCE of their Children upon the Public Schools for the year 1880-81.

TOWNS.				TOWNS.			
	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1 ASHBY .	166	199	1.19-88	33 Saugus .	484	438	.90-50
2 Tyngsboro' .	108	116	1.07-41	34 Carver .	174	157	.90-23
3 Carlisle .	53	56	1.05-66	35 Randolph .	716	645	.90-08
4 Gay Head .	35	36	1.02-86	36 Boxborough,	50	45	.90-00
5 Sunderland .	140	141	1.00-71	37 Charlemont,	114	102	.89-47
6 Mendon .	196	197	1.00-51	38 Medford .	1,204	1,076	.89-37
7 Weston .	187	185	.98-93	39 Wellfleet .	345	308	.89-28
8 Swampscott,	342	336	.98-25	40 Ashfield .	176	157	.89-20
9 Wareham .	550	540	.98-18	41 Danvers .	1,041	925	.88-86
10 Edgartown .	172	168	.97-67	42 Orange .	455	404	.88-79
11 Provincet'n.	828	807	.97-46	43 Townsend .	333	295	.88-59
12 Holbrook .	361	349	.96-68	44 Bolton .	148	131	.88-51
13 Heath .	103	99	.96-11	45 Kingston .	217	192	.88-48
14 Dunstable .	67	64	.95-52	46 Warwick .	119	105	.88-24
15 Hubbardst'n,	222	212	.95-50	47 Rockland .	883	779	.88-22
16 Winchester .	563	536	.95-20	48 Erving .	155	136	.87-74
17 Cottage City,	98	93	.94-90	49 Shrewsbury,	267	234	.87-64
18 Plainfield .	58	55	.94-83	50 Malden .	2,082	1,825	.87-61
19 Belmont .	252	238	.94-44	51 Amherst .	695	608	.87-48
20 Lunenburg .	144	136	.94-44	52 Merrimac .	384	335	.87-24
21 Prescott .	88	83	.94-32	53 Truro .	180	157	.87-22
22 Wendell .	62	58	.93-55	54 Lenox .	416	361	.86-78
23 Ashburnham,	306	286	.93-46	55 Bedford .	148	128	.86-49
24 Leominster .	881	818	.92-85	56 Athol .	677	584	.86-26
25 Granby .	133	123	.92-48	57 Ipswich .	551	475	.86-21
26 Reading .	498	460	.92-37	58 Dana .	108	93	.86-11
27 Shutesbury .	102	94	.92-15	59 New Bedford,	4,083	3,505	.85-84
28 E. Bridgew'r,	477	437	.91-61	60 Harvard .	197	169	.85-80
29 Royalston .	194	177	.91-24	61 Barnstable .	666	571	.85-74
30 Amesbury .	545	495	.90-83	62 Hadley .	378	324	.85-71
31 Chilmark .	75	68	.90-67	63 Stoughton .	960	822	.85-63
32 Wakefield .	914	828	.90-59	64 Southwick .	207	177	.85-51

SCHOOL-RETURNS.

CXXV

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
65	Everett	764	651	85-21	113	Hingham	696	566	81-32
66	S Abington,	533	454	85-18	114	N. Reading,	144	117	81-25
67	Marion	168	143	85-12	115	Conway	275	223	81-09
68	Manchester	259	220	84-94	116	Greenwich	116	94	81-03
69	Tisbury	199	169	84-92	117	Dennis	571	462	80-91
70	Natick	1,665	1,413	84-86	118	Barre	345	279	80-87
71	Hopkinton	920	780	84-78	119	Newton	3,182	2,571	80-79
72	Salisbury	677	573	84-64	120	Otis	192	155	80-73
73	W.Springf'd,	731	618	84-54	121	Wenham	155	125	80-64
74	Plymouth	1,272	1,075	84-51	122	Worth'gton,	129	104	80-62
75	Ayer	393	332	84-48	123	Mansfield	498	401	80-52
76	Florida	116	198	84-48	124	Rehoboth	312	251	80-45
77	Lee	758	640	84-43	125	Fairhaven	448	360	80-35
78	Abington	632	533	84-33	126	Enfield	172	138	80-23
79	Windsor	101	85	84-16	127	Quincy	1,948	1,562	80-18
80	Dedham	1,080	908	84-07	128	Princeton	166	133	80-12
81	Greenfield	710	596	83-94	129	Brewster	211	169	80-09
82	Weymouth	2,028	1,700	83-83	130	Mattapoisett,	205	164	80-00
83	Oakham	135	113	83-70	131	Petersham	170	136	80-00
84	Revere	401	335	83-54	132	Charlton	299	239	79-93
85	Brookfield	485	404	83-30	133	Northboro'	249	199	79-92
86	Leverett	119	99	83-20	134	Gill	129	103	79-84
87	Acton	297	247	83-17	135	Hawley	124	99	79-84
88	Montgomery,	65	54	83-08	136	Orleans	203	162	79-80
89	Nahant	111	92	82-88	137	Grafton	810	646	79-75
90	Sterling	227	188	82-82	138	New Salem	132	105	79-55
91	Mashpee	64	53	82-81	139	Upton	332	264	79-52
92	Hardwick	454	375	82-60	140	Hyde Park	1,401	1,114	79-51
93	Easton	807	666	82-53	141	New Ashford,	34	27	79-41
94	Watertown	555	704	82-34	142	Concord	636	505	79-40
95	Woburn	2,229	1,834	82-28	143	Wrentham	393	312	79-39
96	Uxbridge	462	380	82-25	144	W Stockb'e,	441	350	79-37
97	Deerfield	590	485	82-20	145	Littleton	164	130	79-27
98	Norwood	441	362	82-09	146	N'thampton,	2,089	1,656	79-27
99	Georgetown,	407	334	82-06	147	Somerville	5,054	4,004	79-22
100	Fram'gham,	1,004	823	81-97	148	Rowley	173	137	79-19
101	Holliston	576	471	81-95	149	Melrose	888	703	79-17
102	Freetown	199	163	81-91	150	Boylston	158	125	79-11
103	Hudson	732	599	81-83	151	Harwich	646	511	79-10
104	Arlington	814	666	81-82	152	Shirley	195	154	78-97
105	Wilmington,	148	121	81-76	153	Chelsea	3,648	2,877	78-86
106	Westfield	1,334	1,090	81-71	154	Middleboro',	869	684	78-71
107	Winthrop	153	125	81-70	155	S. Hadley	709	558	78-70
108	Colrain	300	245	81-67	156	Gloucester	4,008	3,154	78-69
109	Essex	289	236	81-66	157	Wayland	368	289	78-53
110	Sharon	216	176	81-48	158	Chesterfield,	135	106	78-52
111	Bridgewater,	652	532	81-47	159	Brookline	1,303	1,023	78-51
112	Milford	1,894	1,542	81-41	160	Templeton	542	425	78-41

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
161	Stoneham .	887	695	78-35	209	Seekonk .	208	156	75-00
162	Agawam .	346	271	78-32	210	Taunton .	3,464	2,594	74-88
163	Medway .	746	584	78-28	211	Stow .	198	148	74-75
164	Bellingham .	215	168	78-14	212	Rutland .	229	171	74-67
165	Hinsdale .	425	332	78-12	213	Dudley .	603	449	74-46
166	Brockton .	2,267	1,769	78-03	214	Monson .	589	438	74-36
167	W. Bridgew'r,	314	245	78-02	215	Blackstone .	958	712	74-32
168	Sandwich .	663	517	77-98	216	Westboro' .	837	622	74-31
169	Chelmsford .	476	371	77-94	217	Franklin .	642	477	74-30
170	Boston .	57703	44885	77-72	218	Walpole .	369	274	74-25
171	Leicester .	554	427	77-71	219	Swansey .	220	163	74-09
172	Sudbury .	183	142	77-60	220	Peru .	73	54	73-97
173	N'w Braintree	116	90	77-59	221	Tewksbury .	199	147	73-87
174	Marlborough,	2,121	1,645	77-56	222	Bradford .	426	314	73-71
175	Lancaster .	279	216	77-42	223	Sturbridge .	376	277	73-67
176	Braintree .	669	517	77-28	224	Lexington .	420	309	73-57
177	Longmead'w,	241	186	77-18	225	Russell .	140	103	73-57
178	Marblehead .	1,407	1,086	77-18	226	N. Brookfield	799	587	73-47
179	Waltham .	2,146	1,653	77-02	227	Granville .	250	183	73-20
180	Huntington .	191	147	76-96	228	Monroe .	52	38	73-08
181	Methuen .	667	513	76-91	229	Cohasset .	412	301	73-06
182	Middleton .	159	122	76-73	230	Williamsb'g,	404	295	73-02
183	Belchertown,	470	360	76-60	231	W. Brookfield	337	246	72-99
184	Lincoln .	149	114	76-51	232	Attleboro' .	1,866	1,359	72-83
185	Andover .	881	676	76-47	233	Hatfield .	305	222	72-79
186	Beverly .	1,441	1,102	76-47	234	Canton .	939	683	72-74
187	Dighton .	305	232	76-07	235	Hanover .	330	240	72-72
188	Lynn .	6,229	4,730	75-93	236	Burlington .	124	190	72-60
189	Somerset .	389	295	75-84	237	Falmouth .	386	280	72-54
190	Yarmouth .	355	269	75-77	238	Marshfield .	247	179	72-47
191	Phillipston .	119	90	75-63	239	Springfield .	5,865	4,250	72-46
192	S. Scituate .	316	239	75-63	240	Billerica .	315	228	72-38
193	Fitchburg .	2,344	1,771	75-55	241	Gardner .	839	607	72-35
194	Milton .	551	416	75-50	242	Hancock .	94	67	72-34
195	Hull .	53	40	75-47	243	Middlefield .	155	112	72-26
196	Shelburne .	265	200	75-47	244	Duxbury .	370	266	71-89
197	Peabody .	1,714	1,293	75-44	245	Sandisfield .	206	148	71-84
198	Westford .	362	273	75-41	246	Groton .	324	232	71-60
199	Dracut .	268	202	75-37	247	Westport .	535	385	71-59
200	Bernardston,	158	119	75-32	248	Oxford .	495	354	71-52
201	Northfield .	259	195	75-29	249	Southampton	200	143	71-50
202	Webster .	939	707	75-29	250	Blandford .	214	153	71-49
203	Ashland .	448	337	75-22	251	Foxborough,	521	372	71-40
204	Medfield .	201	151	75-12	252	Haverhill .	3,500	2,492	71-20
205	W. Newbury,	341	256	75-07	253	Scituate .	525	373	71-05
206	Winchendon,	682	512	75-07	254	Southboro' .	348	247	70-98
207	Maynard .	164	130	75-06	255	Needham .	885	628	70-96
208	Norfolk .	128	96	75-00	256	Halifax .	82	58	70-73

SCHOOL-RETURNS.

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TOWNS.				TOWNS.			
	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
257	Paxton .	116	82	70-69	302	Pepperell .	372
258	Douglas .	412	291	70-63	303	Chester .	275
259	Groveland .	432	305	70-60	304	Hampden .	176
260	Southbridge,	1,279	902	70-52	305	Plympton .	118
261	Cambridge .	9,390	6,614	70-44	306	Sherborn .	155
262	Lynnfield .	108	76	70-37	307	Whately .	211
263	Pittsfield .	2,521	1,774	70-37	308	Dover .	100
264	Palmer .	1,096	767	70-16	309	Eastham .	140
265	N. Andover .	588	412	70-07	310	Leyden .	115
266	Worcester .	10,988	7,697	70-05	311	Ware .	995
267	Easthampt'n,	851	596	70-04	312	Alford .	64
268	Newbury .	279	195	69-89	313	Montague .	1,145
269	Rockport .	792	553	69-82	314	Monterey .	120
270	Adams .	1,163	811	69-73	315	Pembroke .	268
271	Millbury .	966	671	69-46	316	Becket .	217
272	Raynham .	326	225	69-02	317	Hanson .	246
273	Tolland .	87	60	68-97	318	Savoy .	153
274	Westminster	295	203	68-81	319	Topsfield .	172
275	Rowe .	96	66	68-75	320	W'thampton	131
276	Wilbraham .	262	180	68-70	321	Boxford .	135
277	Spencer .	1,492	1,022	68-50	322	Tyringham .	120
278	Acushnet .	206	141	68-45	323	Fall River .	9,763
279	Cheshire .	359	295	68-24	324	Warren .	861
280	Cummingt'n,	185	126	68-11	325	Newburyp't,	2,486
281	Stockbridge,	376	256	68-09	326	N. Marlboro'	395
282	Chatham .	417	283	67-87	327	W. Boylston,	614
283	N. Adams .	2,168	1,479	67-76	328	Ludlow .	330
284	Auburn .	229	155	67-69	329	Salem .	4,862
285	Rochester .	207	140	67-63	330	Goshen .	74
286	Clinton .	1,671	1,127	67-44	331	Pelham .	122
287	Buckland .	352	237	67-33	332	Washington,	128
288	Northbridge,	850	572	67-29	333	Hamilton .	115
289	Gt. Barr'gton	879	591	67-24	334	Wales .	188
290	Holden .	485	326	67-22	335	Lakeville .	220
291	Lanesboro' .	275	184	66-91	336	Brimfield .	213
292	Nantucket .	560	373	66-61	337	Richmond .	268
293	Sheffield .	457	303	66-30	338	Clarksburg .	158
294	Williamst'n,	669	443	66-22	339	Mt. Wash'n,	31
295	Dalton .	385	253	65-71	340	Sutton .	723
296	Berlin .	191	125	65-45	341	Norton .	299
297	Lowell .	9,121	5,961	65-35	342	Gosnold .	23
298	Berkley .	150	98	65-33	343	Chicopee .	2,186
299	Lawrence .	6,865	4,480	65-26	344	Holyoke .	4,267
300	Holland .	63	41	65-08	345	Egremont .	249
301	Dartmouth .	506	329	65-02	346	Wellesley *	-

* Returns included with Needham.

GRADUATED TABLES — THIRD SERIES.

[COUNTY TABLES.]

In which all the Towns in the respective Counties in the State are numerically arranged according to the AVERAGE ATTENDANCE of their Children upon the Public Schools for the year 1879-80.

[For an explanation of the principles on which these Tables are constructed, see *ante*, p. cv.]

BARNSTABLE COUNTY.

TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1 PROVINCETOWN .	828	807	·97-46	8 Orleans .	203	162	·79-80
2 Wellfleet .	345	308	·89-28	9 Harwich .	646	511	·79-10
3 Truro .	180	157	·87-22	10 Sandwich .	663	517	·77-98
4 Barnstable .	666	571	·85-74	11 Yarmouth .	355	269	·75-77
5 Mashpee .	64	53	·82-81	12 Falmouth .	386	280	·72-54
6 Dennis .	571	462	·80-91	13 Chatham .	417	283	·67-87
7 Brewster .	211	169	·80-09	14 Eastham .	140	88	·62-86

BERKSHIRE COUNTY.

1 LENOX .	416	361	·86-78	17 GtBarringt'n	879	591	·67-24
2 Florida .	116	98	·84-48	18 Lanesboro'	275	184	·66-91
3 Lee .	758	640	·84-43	19 Sheffield .	457	303	·66-30
4 Windsor .	101	85	·84-16	20 Williamst'n,	669	443	·66-22
5 Otis .	192	155	·80-73	21 Dalton .	385	253	·65-71
6 NewAshford,	34	27	·79-41	22 Alford .	64	40	·62-50
7 W. Stockb'e,	441	350	·79-37	23 Monterey .	120	74	·61-67
8 Hinsdale .	425	332	·78-12	24 Becket .	217	133	·61-29
9 Peru .	73	54	·73-97	25 Savoy .	153	93	·60-78
10 Hancock .	94	67	·72-34	26 Tyringham .	120	72	·60-00
11 Sandisfield .	206	148	·71-84	27 N. Marlboro'	395	233	·58-89
12 Pittsfield .	2,521	1,774	·70-37	28 Washington,	128	72	·56-25
13 Adams .	1,163	811	·69-73	29 Richmond .	268	137	·51-12
14 Cheshire .	359	295	·68-24	30 Clarksburg .	158	80	·50-63
15 Stockbridge,	376	256	·68-09	31 Mt. Wash'ton	31	15	·49-03
16 N. Adams .	2,168	1,479	·67-76	32 Egremont .	249	89	·35-74

SCHOOL-RETURNS.

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BRISTOL COUNTY.

TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1 NEW BEDFORD .	4,083	3,505	.85-84	11 Swanzey .	220	163	.74-09
2 Easton .	807	666	.82-53	12 Attleboro' .	1,866	1,359	.72-83
3 Freetown .	199	163	.81-91	13 Westport .	535	385	.71-59
4 Mansfield .	498	401	.80-52	14 Raynham .	326	225	.69-02
5 Rehoboth .	312	251	.80-45	15 Acushnet .	206	141	.68-45
6 Fairhaven .	448	360	.80-35	16 Berkley .	150	98	.65-33
7 Dighton .	305	232	.76-07	17 Dartmouth .	506	329	.65-02
8 Somerset .	389	295	.75-84	18 Fall River .	9,763	5,845	.59-87
9 Seekonk .	208	156	.75-00	19 Norton .	299	140	.46-82
10 Taunton .	3,464	2,594	.74-88				

DUKES COUNTY.

1 GAY HEAD .	35	36	1-02-86	4 Chilmark .	75	68	.90-67
2 Edgartown .	172	168	.97-67	5 Tisbury .	199	169	.84-92
3 Cottage City,	98	93	.94-90	6 Gosnold .	23	10	.43-48

ESSEX COUNTY.

1 SWAMPSCOTT .	342	336	.98-25	19 Beverly .	1,441	1,102	.76-47
2 Amesbury .	545	495	.90-83	20 Lynn .	6,229	4,730	.75-93
3 Saugus .	484	438	.90-50	21 Peabody .	1,714	1,293	.75-44
4 Danvers .	1,041	925	.88-86	22 W. Newbury,	341	256	.75-07
5 Merrimac .	384	335	.87-24	23 Bradford .	426	314	.73-71
6 Ipswich .	551	475	.86-21	24 Haverhill .	3,500	2,492	.71-20
7 Manchester .	259	220	.84-94	25 Groveland .	432	305	.70-60
8 Salisbury .	677	573	.84-64	26 Lynnfield .	108	76	.70-37
9 Nahant .	111	92	.82-88	27 N. Andover .	588	412	.70-07
10 Georgetown,	407	334	.82-06	28 Newbury .	279	195	.69-89
11 Essex .	289	236	.81-66	29 Rockport .	792	553	.69-82
12 Wenham .	155	125	.80-64	30 Lawrence .	6,865	4,480	.65-26
13 Rowley .	173	137	.79-19	31 Topsfield .	172	104	.60-47
14 Gloucester .	4,008	3,154	.78-69	32 Boxford .	135	81	.60-60
15 Marblehead .	1,407	1,086	.77-18	33 Newburyp't,	2,486	1,475	.59-33
16 Methuen .	667	513	.76-91	34 Salem .	4,862	2,784	.57-26
17 Middleton .	159	122	.76-73	35 Hamilton .	115	64	.55-65
18 Andover .	884	676	.76-47				

BOARD OF EDUCATION.

FRANKLIN COUNTY.

TOWNS.				TOWNS.			
		No. of children between 5 and 15 years of age in each town.	Average attendance upon School.			No. of children between 5 and 15 years of age in each town.	Average attendance upon School.
		Ratio of attendance to the whole N of children between 5 and 15, expressed in decimals.				Ratio of attendance to the whole N of children between 5 and 15, expressed in decimals.	
1	SUNDERLAND .	140	141	1.00-71	14	Conway .	275
2	Heath .	103	99	.96-11	15	Gill .	129
3	Wendell .	62	58	.93-55	16	Hawley .	124
4	Shutesbury .	102	94	.92-15	17	New Salem .	132
5	Charlemont .	114	102	.89-47	18	Shelburne .	265
6	Ashfield .	176	157	.89-20	19	Bernardston,	158
7	Orange .	455	404	.88-79	20	Northfield .	259
8	Warwick .	119	105	.88-24	21	Monroe .	52
9	Erving .	155	136	.87-74	22	Rowe .	96
10	Greenfield .	710	596	.83-94	23	Buckland .	352
11	Leverett .	119	99	.83-20	24	Whately .	211
12	Deerfield .	590	485	.82-20	25	Leyden .	115
13	Colrain .	300	245	.81-67	26	Montague .	1,145
							707
							.81-09
							.79-84
							.79-84
							.79-55
							.75-47
							.75-32
							.75-29
							.73-08
							.68-75
							.67-33
							.63-03
							.62-61
							.61-75

HAMPDEN COUNTY.

1	SOUTHWICK .	207	177	.85-51	12	Palmer .	1,096	769	.70-16
2	W. Springf'd	731	618	.84-54	13	Tolland .	87	60	.63-97
3	Montgomery,	65	54	.83-08	14	Wilbraham .	262	180	.68-70
4	Westfield .	1,334	1,090	.81-71	15	Holland .	63	41	.65-08
5	Agawam .	346	271	.78-32	16	Chester .	275	175	.63-63
6	Longmead'w,	241	186	.77-18	17	Hampden .	176	112	.63-63
7	Monson .	589	438	.74-36	18	Ludlow .	330	189	.57-27
8	Russell .	140	103	.73-57	19	Wales .	188	104	.55-32
9	Granville .	250	183	.73-20	20	Brimfield .	213	113	.53-05
10	Springfield .	5,865	4,250	.72-46	21	Chicopee .	2,186	923	.42-22
11	Blandford .	214	153	.71-49	22	Holyoke .	4,267	1,613	.37-80

HAMPSHIRE COUNTY.

1	PLAINFIELD .	58	55	.94-83	13	Belchertown,	470	360	.76-60
2	Prescott .	88	83	.94-32	14	Williamsb'g,	404	295	.73-02
3	Granby .	133	123	.92-48	15	Hatfield .	305	222	.72-79
4	Amherst .	695	608	.87-48	16	Middlefield .	155	112	.72-26
5	Hadley .	378	324	.85-71	17	Southamp'tn,	200	143	.71-50
6	Greenwich .	116	94	.81-03	18	Easthampt'n,	851	596	.70-04
7	Worthington,	129	104	.80-62	19	Cummington,	185	126	.68-11
8	Enfield .	172	138	.80-23	20	Ware .	995	623	.62-61
9	Northamp'tn,	2,089	1,656	.79-27	21	Westhamp'n,	131	79	.60-31
10	So. Hadley .	709	558	.78-70	22	Goshen .	74	42	.56-76
11	Chesterfield,	135	106	.78-52	23	Pelham .	122	69	.56-56
12	Huntington,	191	147	.76-96					

SCHOOL-RETURNS.

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MIDDLESEX COUNTY.

TOWNS.				TOWNS.					
No. of children between 5 and 15 years of age in each town.				No. of children between 5 and 15 years of age in each town.					
Average attendance upon School.				Average attendance upon School.					
Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.				Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.					
1	ASHBY . . .	166	199	1.19-88	28	Newton . .	3,182	2,571	.80-79
2	Tyngsboro' .	108	116	1.07-41	29	Concord . .	636	505	.79-40
3	Carlisle . .	53	56	1.05-66	30	Littleton . .	164	130	.79-27
4	Weston . . .	187	185	.98-93	31	Somerville . .	5,054	4,004	.79-22
5	Dunstable . .	67	64	.95-52	32	Melrose . . .	888	703	.79-17
6	Winchester .	563	536	.95-20	33	Shirley . . .	195	154	.78-97
7	Belmont . . .	252	238	.94-44	34	Wayland . . .	368	289	.78-53
8	Reading . . .	498	460	.92-37	35	Stoneham . .	887	695	.78-35
9	Wakefield . .	914	828	.90-59	36	Chelmsford .	476	371	.77-94
10	Boxborough,	50	45	.90-00	37	Sudbury . . .	183	142	.77-60
11	Medford . . .	1,204	1,076	.89-37	38	Marlboro' . .	2,121	1,645	.77-56
12	Townsend . .	333	295	.88-59	39	Waltham . .	2,146	1,653	.77-02
13	Malden . . .	2,082	1,825	.87-61	40	Lincoln . . .	149	114	.76-51
14	Bedford . . .	148	128	.86-49	41	Westford . .	362	273	.75-41
15	Everett . . .	764	651	.85-21	42	Dracut	268	202	.75-37
16	Natick	1,665	1,413	.84-86	43	Ashland . . .	448	337	.75-22
17	Hopkinton . .	920	780	.84-78	44	Maynard . . .	164	130	.75-06
18	Ayer	393	332	.84-48	45	Stow	198	148	.74-75
19	Acton . . . .	.297	247	.83-17	46	Tewksbury . .	199	147	.73-87
20	Watertown . .	855	704	.82-34	47	Lexington . .	420	309	.73-57
21	Woburn . . .	2,229	1,834	.82-28	48	Burlington . .	124	90	.72-60
22	Framingh'm,	1,004	823	.81-97	49	Billerica . . .	315	228	.72-38
23	Holliston . .	576	471	.81-95	50	Groton	324	232	.71-60
24	Hudson . . .	732	599	.81-83	51	Cambridge . .	9,390	6,614	.70-44
25	Arlington . .	814	666	.81-82	52	Lowell	9,121	5,961	.65-35
26	Wilmington,	148	121	.81-76	53	Pepperell . .	372	237	.63-71
27	N. Reading,	144	117	.81-25	54	Sherborn . . .	155	98	.63-22

BOARD OF EDUCATION.

NORFOLK COUNTY—CONCLUDED.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
13	Bellingham .	215	168	·78-14	20	Cohasset .	412	301	·73-06
14	Braintree .	669	517	·77-28	21	Canton .	939	683	·72-74
15	Milton .	551	416	·75-50	22	Foxborough,	521	372	·71-40
16	Medfield .	201	151	·75-12	23	Needham .	885	628	·70-96
17	Norfolk .	128	96	·75-00	24	Dover .	100	63	·63-00
18	Franklin .	642	477	·74-30	25	Wellesley .	—	—	—
19	Walpole .	369	274	·74-25					

PLYMOUTH COUNTY.

1	WAREHAM .	550	540	·98-18	15	W.Bridgew'r	314	245	·78-02
2	E. Bridgew'r,	477	437	·91-61	16	S. Scituate .	316	239	·75-63
3	Carver .	174	157	·90-23	17	Hull .	53	40	·75-47
4	Kingston .	217	192	·88-48	18	Hanover .	330	240	·72-73
5	Rockland .	883	779	·88-22	19	Marshfield .	247	179	·72-47
6	S Abington.	533	454	·85-18	20	Duxbury .	370	266	·71-89
7	Marion .	168	143	·85-12	21	Scituate .	525	373	·71-05
8	Plymouth .	1,272	1,075	·84-51	22	Halifax .	82	58	·70-73
9	Abington .	632	533	·84-33	23	Rochester .	207	140	·67-63
10	Bridgewater,	653	532	·81-47	24	Plympton .	118	75	·63-56
11	Hingham .	696	566	·81-32	25	Pembroke .	268	165	·61-57
12	Mattapoisett,	205	164	·80-00	26	Hanson .	246	150	·60-98
13	Middleboro',	869	684	·78-71	27	Lakeville .	220	120	·54 55
14	Brockton .	2,267	1,769	·78-03					

SUFFOLK COUNTY.

1	REVERE .	401	335	83-54	3	Chelsea .	3,648	2,877	·78-86
2	Winthrop .	153	125	81-70	4	Boston .	57703	44885	·77-72

WORCESTER COUNTY.

1	MENDON .	196	197	1·00-51	6	Royalston .	194	177	·91-24
2	Hubbardst'n,	222	212	·95-50	7	Bolton .	148	131	·88-51
3	Lunenburg .	144	136	·94-44	8	Shrewsbury.	267	234	·87-64
4	Ashburnham,	306	286	·93-46	9	Athol .	677	584	·86-26
5	Leominster .	881	818	·92-85	10	Dana .	108	93	·86-11

SCHOOL-RETURNS.

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WORCESTER COUNTY — CONCLUDED.

	TOWNS.	N ^o . of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole N ^o . of children between 5 and 15, expressed in decimals.		TOWNS.	N ^o . of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole N ^o . of children between 5 and 15, expressed in decimals.
11	Harvard .	197	169	·85-80	35	Dudley .	603	449	·74-46
12	Oakham .	135	113	·83-70	36	Blackstone .	958	712	·74-32
13	Brookfield .	485	404	·83-30	37	Westboro' .	837	622	·74-31
14	Sterling .	227	188	·82-82	38	Sturbridge .	376	277	·73-67
15	Hardwick .	454	375	·82-60	39	N Brookfield.	799	587	·73-47
16	Uxbridge .	462	380	·82-25	40	W Brookfield	337	246	·72-99
17	Milford .	1,894	1,542	·81-41	41	Gardner .	839	607	·72-35
18	Barre .	345	279	·80-87	42	Oxford .	495	354	·71-52
19	Princeton .	166	133	·80-12	43	Southboro' .	348	247	·70-98
20	Petersham .	170	136	·80-00	44	Paxton .	116	82	·70-69
21	Charlton .	299	239	·79-93	45	Douglas .	412	291	·70-63
22	Northboro' .	249	199	·79-92	46	Southbridge,	1,279	902	·70-52
23	Grafton .	810	646	·79-75	47	Worcester .	10988	7,697	·70-05
24	Upton .	332	264	·79-52	48	Millbury .	966	671	·69-46
25	Boylston .	158	125	·79-11	49	Westminster,	295	203	·68-81
26	Templeton .	542	425	·78-41	50	Spencer .	1,492	1,022	·68-50
27	Leicester .	554	427	·77-71	51	Auburn .	229	155	·67-69
28	N. Braintree,	116	90	·77-59	52	Clinton .	1,671	1,127	·67-44
29	Lancaster .	279	216	·77-42	53	Northbridge,	850	572	·67-29
30	Phillipston .	119	90	·75-63	54	Holden .	485	326	·67-22
31	Fitchburg .	2,344	1,771	·75-55	55	Berlin .	191	125	·65-45
32	Webster .	939	707	·75-29	56	Warren .	861	514	·59-70
33	Winchendon	682	512	·75-07	57	W. Boylston,	614	356	·57-98
34	Rutland .	229	171	·74-67	58	Sutton .	723	348	·48-13

TABLE in which all the Counties are numerically arranged, according to the AVERAGE ATTENDANCE of their Children upon the Public Schools for the year 1880-81.

1879-80.	1880-81.	COUNTIES.	Ratio of Attendance.
1	1	DUKES	·90-87
2	2	Barnstable	·81-71
5	3	Plymouth	·80-01
4	4	Norfolk	·78-97
9	5	Suffolk	·77-90
3	6	Franklin	·77-70
6	7	Middlesex	·77-11
8	8	Hampshire	·75-85
7	9	Worcester	·73-55
11	10	Essex	·72-02
12	11	Bristol	·70-40
10	12	Berkshire	·69-19
13	13	Nantucket	·66-61
14	14	Hampden	·61-71

AVERAGE ATTENDANCE FOR THE STATE.

Number of children between 5 and 15 years of age in the State .	312,680
Average attendance	233,108
Ratio of attendance to the whole number between 5 and 15 years of age, expressed in decimals	·74-55

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